Tense, mood, and aspect expressions in Nafsan (South Efate) from a typological perspective

The perfect aspect and the realis/irrealis mood

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Abstract

In this thesis I study the meaning of tense, mood, and aspect (TMA) expressions in Nafsan (South Efate), an Oceanic language of Vanuatu, from a typological perspective. I focus on the meanings of the perfect aspect and realis/irrealis mood in Nafsan and other Oceanic languages, as case studies for investigating the cross-linguistic features of these TMA categories.

Given the diversity of TMA systems in languages of the world, the status of many TMA categories as cross-linguistically valid has been disputed in the linguistic literature. Two such debates concern the cross-linguistic validity of the perfect aspect and the realis/irrealis distinction. Oceanic languages feature some of the most controversial aspects of the semantics of these categories. For instance, many Oceanic languages, including Nafsan, have perfects that denote the meaning of change of state, a property which has recently been attributed to a new TMA category called "iamitive" (Olsson, 2013). Regarding the realis/irrealis distinction, Nafsan and other Oceanic languages are said to express this distinction by portmanteau subject markers. Both the validity of the realis/irrealis mood and its expression by subject markers have been criticized in the literature (Bybee, 1998; Cristofaro, 2012).

In order to analyze the meanings of the perfect aspect and the realis/irrealis mood in Nafsan, I studied the Nafsan grammar (Thieberger, 2006) and corpus by Thieberger (1995–2018), followed by my own fieldwork (Krajinović, 2017b) which relied on semantic elicitation through storyboards (see Burton & Matthewson, 2015) and questionnaires (e.g. Dahl, 2000c). These types of elicitation methods were used to target fine-grained TMA meanings of Nafsan, which were then analyzed through some formal semantic models, such as branching-times, and compared with descriptions of other Oceanic languages through typological methods, such as semantic maps.

Regarding the perfect aspect, I found that the Nafsan marker *pe* has all the functions considered to be typical of the English-style perfect, except for the additional meaning of change of state. I place the analysis of the Nafsan perfect in the debate about the cross-linguistic validity of iamitives, defined by the meaning of change of state akin to 'already' and lacking experiential and universal perfect functions (Olsson, 2013). Based on the data from Nafsan and other Oceanic languages, I show that when language-internal processes, such as aspectual coercion, are considered, the semantic definition of perfect aspect proposed by Klein (1994) is sufficient to account for additional perfect functions, without the need to posit the new iamitive category. Moreover, by creating a semantic map of the perfect based the data from five Oceanic languages, I found that the spread of the proposed iamitive functions is not attested in the Oceanic sample studied here, which means that the change-of-state meaning as the proposed core iamitive meaning does not uniquely define this cate-

gory, which can be taken as evidence against adopting iamitives as a new cross-linguistic category. Regarding the realis/irrealis distinction, expressed by portmanteau subject markers in Nafsan, I have found that the "realis" category is semantically underspecified in Nafsan, as it can occur in irrealis contexts that should be incompatible with realis meanings. I propose that "realis" subject markers are in fact only subject and person marking that occasionally receives realis meanings through pragmatic competition with the irrealis subject markers. This analysis has the potential to explain similar problems attested in other Oceanic languages of Melanesia. By adopting a branching-times model that unites the expression of modality and temporal reference (von Prince, 2019), I show that Nafsan and several other Oceanic languages provide evidence that irrealis as a mood category referring to non-actual worlds is a semantically meaningful category.

The contribution of this work is to the areas of TMA semantics, typology, Oceanic languages, language description and methodologies used in language documentation. Besides the theoretical contribution to the understanding of cross-linguistic properties of the perfect aspect and realis/irrealis mood, this thesis can also be used as a methodological guide to testing and assigning linguistic categories in language description and documentation.

Zusammenfassung

In dieser Arbeit untersuche ich aus einer typologischen Perspektive die Bedeutung von Tempus, Modalität und Aspekt (TMA) Ausdrücken in Nafsan (South Efate), einer ozeanischen Sprache Vanuatus. Ich konzentriere mich auf die Bedeutung des perfektiven Aspekts und der Realis/Irrealis-Modalität in Nafsan und anderen ozeanischen Sprachen, als Fallstudien zur Untersuchung der sprachübergreifenden Merkmale dieser TMA-Kategorien.

Angesichts der Vielfalt der TMA-Systeme in den Sprachen der Welt wurde der Status vieler TMA-Kategorien als sprachübergreifend gültige Kategorien in der linguistischen Literatur diskutiert. Zwei dieser Debatten betreffen die sprachübergreifende Gültigkeit des perfektiven Aspekts und die Unterscheidung zwischen Realis und Irrealis. Ozeanische Sprachen weisen einige der kontroversesten Merkmale der Semantik dieser Kategorien auf. Viele ozeanische Sprachen, u.a. Nafsan, benutzen Perfekt, um die Bedeutung von Zustandsänderungen (*change of state*) zu bezeichnen, eine Eigenschaft, die kürzlich einer neuen TMA-Kategorie namens *iamitive* zugeschrieben wurde (Olsson, 2013). Die Unterscheidung zwischen Realis und Irrealis wird in Nafsan und andere ozeanische Sprachen durch Subjektmarker zum Ausdruck gebracht. Sowohl die Gültigkeit der Realis/Irrealis als auch deren Ausdruck durch Subjektmarker wurden in der Literatur kritisiert (Bybee, 1998; Cristofaro, 2012).

Um die Bedeutung des perfektiven Aspekts und der Realis/Irrealis-Modalität in Nafsan zu analysieren, untersuche ich die Grammatik von Nafsan (Thieberger, 2006) und den Korpus von Thieberger (1995–2018), gefolgt von meiner eigenen Feldarbeit (Krajinović, 2017b), die sich auf semantische Erhebungen durch Storyboards (see Burton & Matthewson, 2015) und Fragebögen (e.g. Dahl, 2000c) stützt. Diese Art der Erhebungsmethode wurde verwendet, um einzelne TMA-Bedeutungen von Nafsan zu erfassen, die dann durch einige formale semantische Modelle, wie zum Beispiel *branching-times*, analysiert und mit Beschreibungen anderer ozeanischer Sprachen durch typologische Methoden, wie *semantic maps*, verglichen wurden.

Meine Analysen zeigen, dass der Perfekt-Marker *pe* in Nafsan alle Funktionen hat, die für das Perfekt im Englischen typisch sind, mit Ausnahme der zusätzlichen Bedeutung von Zustandsänderungen. Die Verwendung des Nafsan-Perfekts liefert einen Beitrag zu der Debatte über die sprachübergreifende Gültigkeit von *iamitive*, definiert durch die Bedeutung von Zustandsänderungen, die das Partikel 'schon' ähneln und denen es an *experiential* und *universal* Funktionen mangelt (Olsson, 2013). Basierend auf den Daten aus Nafsan und anderen ozeanischen Sprachen zeige ich, dass bei Betrachtung sprachinterner Prozesse, wie z.B. *aspectual coercion*, die von Klein (1994) vorgeschlagene semantische Definition des Perfekts ausreichend ist, um zusätzliche Funktionen des Perfekts

zu berücksichtigen, ohne eine neue *iamitive* Kategorie zu etablieren. Darüber hinaus habe ich durch die Erstellung einer *semantic map* des Perfekts basiert auf Daten aus fünf ozeanischen Sprachen festgestellt, dass die Verbreitung der vorgeschlagenen Funktionen von *iamitive* in der hier untersuchten ozeanischen Stichprobe nicht belegt ist, was bedeutet, dass die Bedeutung des Zustandsänderns als vorgeschlagene iamitative Kernbedeutung diese Kategorie nicht eindeutig definiert wird, was als Beweis dafür dienen kann, dass *iamitive* als neue sprachübergreifende Kategorie angenommen werden kann. Was die Unterscheidung zwischen Realis und Irrealis betrifft, die in Nafsan durch Portmanteau Subjekt-Marker zum Ausdruck kommt, so habe ich festgestellt, dass die Kategorie Realis in Nafsan semantisch unterbewertet ist, wie sie in Irrealis-Kontexten auftreten kann, die mit der Bedeutung von Realis unvereinbar sein sollten. Ich schlage vor, dass "Realis" Subjekt-Marker tatsächlich nur Subjekt- und Personen-Marker sind, die gelegentlich Realis-Bedeutungen durch pragmatischen Wettbewerb mit den Irrealis Subjekt-Markern erhalten. Dieses Muster hat das Potenzial, ähnliche Probleme zu erklären, die in anderen ozeanischen Sprachen Melanesiens nachgewiesen wurden. Indem ich das *branching-times* Modell annehme, das den Ausdruck von Modalität und zeitlichem Bezug vereint (von Prince, 2019), zeige ich, dass Nafsan und mehrere andere ozeanische Sprachen Beweise dafür liefern, dass Irrealis als Modalitätskategorie, die sich auf nicht-aktuelle Welten bezieht, eine semantisch sinnvolle Kategorie ist.

Der Beitrag dieser Arbeit ist auf die Bereiche TMA-Semantik, Typologie, ozeanische Sprachen, Sprachbeschreibung und Methoden, die in der Sprachdokumentation verwendet werden. Neben dem theoretischen Beitrag dieser Arbeit zum Verständnis der sprachübergreifenden Eigenschaften des perfektiven Aspekts und der Realis/Irrealis-Modalität kann diese Arbeit auch als methodischer Leitfaden für das Testen und Zuordnen von Sprachkategorien in der Sprachbeschreibung und Dokumentation verwendet werden.

Selbständigkeitserklärung zur Dissertation

Ich erkläre ausdrücklich, dass es sich bei der von mir eingereichten Dissertation mit dem

Tense, mood, and aspect expressions in Nafsan (South Efate) from a typological perspective: The perfect aspect and the realis/irrealis mood

um eine von mir erstmalig, selbständig und ohne fremde Hilfe verfasste Arbeit handelt.

Ich erkläre ausdrücklich, dass ich sämtliche in der oben genannten Arbeit verwendeten fremden Quellen, auch aus dem Internet (einschließlich Tabellen, Grafiken u. Ä.) als solche kenntlich gemacht habe. Insbesondere bestätige ich, dass ich ausnahmslos sowohl bei wörtlich übernommenen Aussagen bzw. unverändert übernommenen Tabellen, Grafiken u. Ä. (Zitaten) als auch bei in eigenen Worten wiedergegebenen Aussagen bzw. von mir abgewandelten Tabellen, Grafiken u. Ä. anderer Autorinnen und Autoren (Paraphrasen) die Quelle angegeben habe.

Mir ist bewusst, dass Verstöße gegen die Grundsätze der Selbständigkeit als Täuschung betrachtet und nach § 16 der Promotionsordnung der Sprach- und literaturwissenschaftlichen Fakultät vom 27. April 2016 (Amtliches Mitteilungsblatt der Humboldt-Universität zu Berlin Nr. 26/2016) entsprechend geahndet werden.

Datum: 29.11.2019

Ana Krajinović Rodrigues

Declaration

This is to certify that

1. the thesis comprises only my original work towards the PhD,

2. due acknowledgment has been made in the text to all other material used,

3. the thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Ana Krajinović Rodrigues

Preface

All the chapters of this thesis consist of original text. However, some parts of the content of specific sections have been published or accepted for publication. Here I list those publications and the corresponding contents of the thesis.

A summarized and predated version of the content of Section 5.2 was accepted for publication in *Proceedings of TripleA 5 2018* by University of Tübingen on the 12th of March 2019. The full reference to the paper is the following: Krajinović, Ana. The semantics of perfect in Nafsan and implications for typology. In M. Ryan Bochnak, Miriam Butt, Erlinde Meertens & Mark-Matthias Zymla (eds.), *Proceedings of TripleA 5: Fieldwork Perspectives on the Semantics of African, Asian and Austronesian Languages*, Tübingen: Universitätsbibliothek Tübingen, Publikationssystem. This paper is cited in the thesis as Krajinović (2019).

The content of Section 8.5 reflects some parts of an earlier analysis published in Krajinović, Ana. 2018. Comparative study of conditional clauses in Nafsan. In Boerger, Brenda H. and Unger, Paul (eds.). *SIL Language and Culture Documentation and Description 41 (Proceedings of COOL 10)*, 39–61. SIL International. This paper is cited in the thesis as Krajinović (2018).

The argument about the irrealis referring to different areas of the branching-times model presented in Section 9.2.2 draws from my collaboration with Kilu von Prince and Manfred Krifka on a joint paper: von Prince, Kilu and Ana Krajinović and Manfred Krifka. submitted. Irrealis is real. This paper is cited as von Prince et al. (submitted). However, the resulting discussion of this main idea as applied to the presented language data in Section 9.2.2 is my own.

In Section 9.2 some examples and figures are adopted from a joint paper: von Prince, Kilu, Ana Krajinović, Manfred Krifka, Valérie Guérin & Michael Franjieh. 2019. Mapping Irreality: Storyboards for eliciting TAM contexts. In Anja Gattnar, Robin Hörnig, Melanie Störzer & Sam Featherston (eds.), *Proceedings of Linguistic Evidence 2018: Experimental Data Drives Linguistic Theory*, Tübingen: University of Tübingen. In all instances, the said figures and examples contain the citation von Prince et al. (2019d).

All the content that discusses the work of my collaborators in the MelaTAMP project (see below) in any way is cited in the relevant discussions.

This PhD project was funded by the German Research Foundation DFG for the MelaTAMP project (273640553) at Humboldt-Universität zu Berlin ('A corpus-based contrastive study of tense, aspect, modality and polarity (TAMP) in Austronesian languages of Melanesia (MelaTAMP)') and the ARC Centre of Excellence for the Dynamics of Language during my stay at the University of Melbourne.

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First and foremost, I wish to thank all Nafsan speakers who made this PhD thesis possible by participating in my research, this work is for you: Lionel Emil, Gray Kaltaƀau, Yvanna Ataurua, Marinette Kalpram, Belinda Kalopong, Julian Malnaem, Michael Joseph, Honoré Albert, Jefferey Taun, Lingkary Carol Kalpram, Glenda Lalier, Lillot Reecy, Touskau Kaloros, Tumaira Kaltaƀau, and Rose Kalfabun. I thank especially to Lionel Emil, a semanticist in disguise, and Gray Kaltaƀau for their particular interest in my work and intricacies of linguistics, as well as the invaluable help with transcription and translation of the Nafsan recordings. Most of all, thank you for your friendship and being there for me and my academic questions even when we are apart. Needless to say, any mistakes in the Nafsan examples used in this work are my own. I wish you all the luck in your future endeavors in documenting Nafsan and promoting its speakers! I am especially grateful to Lingkary Carol Kalpram and Yvanna Ataurua, as well as to Chylla, Jamin, Terry, Steeve, Vairua, and the rest of the Kalpram family for hosting me in Erakor whenever I needed, and for taking care of me just like family does. I also want to thank to Joel Kalpram, Endis Kalsarap, all the participants of the dictionary workshops in Erakor in 2017 and 2018, and everyone else in Erakor who has helped me to reach out to people and made me feel at home.

I am most indebted to Kilu von Prince and Manfred Krifka for giving me the opportunity to work with them in the MelaTAMP project and for their support every step of the way during my PhD project and all the side projects I had. Just the number of citations of our joint papers in this thesis can tell how much great work we did in the MelaTAMP project. Besides being the source of my inspiration and learning, Kilu and Manfred encouraged me to be both scientifically independent and collaborative, through which I found my own scientific expression. I especially thank Kilu for her emotional support and friendship that made it so much easier to navigate through the mental load of an academic life. A big thanks also goes to the rest of the MelaTAMP team: Lena Weissmann, Annika Tjuka, and Stephan Druskat, who gave me feedback on countless presentations and were always there to hear about my achievements and struggles. And I am especially thankful to Annika for helping out with the German abstract.

I am most grateful to Nick Thieberger for giving me the opportunity to stay at the University of Melbourne and making it possible for me to study Nafsan by sharing his expertise about the language and its speakers. His commitment to working on Nafsan and making the records of the language available to the speakers was most inspiring and made me see the value of my work beyond my PhD. I am especially thankful for his quick replies and extensive feedback on all aspects of my work, as

well as standing up for me in difficult situations.

I thank Rachel Nordlinger for inspiring me through her scientific attitude and providing invaluable feedback on my work, as well as many insightful personal conversations we had.

I am grateful to Jozina Vander Klok for scientific collaboration on topics of our shared interests and all the fun we had at conferences.

I want to thank many more people who have taken their time to hear about my research and give me their advice in many different areas: Marie-Eve Ritz, Jurica Polančec, James Bednall, Patrick Caudal, Nick Evans, Felicity Meakins, Evan Kidd, Östen Dahl, Johan van der Auwera, Elizabeth Pearce, Tim Mcnamara, everyone in the ARC Centre of Excellence for the Dynamics of Language, and everyone else I might have forgotten.

I also wish to thank Rosey Billington who is in many ways responsible for the success of my fieldwork trips, due to her social, psychological, technological, bug-killing, and fire-making skills. I would not have made it too far without you, Rosey! Rosey was also a great collaborator and my support in our academic projects.

I have also had the privilege of meeting many other fieldworkers and expats in Vanuatu. I thank John Lynch for being interested in my work and finding time to discuss my research in Port Vila. I also thank Eleanor Ridge, Mike Franjieh, Georgia Noy, and Marie-France Duhamel for making my time in Port Vila so enjoyable.

I especially thank my friends in Melbourne, Stefan Schnell, Vanya Kapitonov, Catalina Torres Orjuela and others for getting me out of the house to have fun, and also having fruitful discussions about my work. I also thank Seamus Donnelly for fun times in Canberra and Melbourne.

My fellow PhD students in Berlin have also made my PhD journey easier: thank you Paola Fritz, Julian Rott, and Jens Hopperdietzel for sharing and being there for me! I also thank Leonel Morejon for insightful discussions about science and life.

I also thank to the audiences of the conferences listed below, at which I presented my work and received a lot of valuable feedback. And not less importantly, I wish to thank everyone with whom I had fun times after the academic events.

- 13th Conference of the Association for Linguistic Typology (ALT), 4-6 September 2019, Pavia, Italy
- 11th International Austronesian and Papuan Languages and Linguistics Conference (APLL), 13-15 June 2019, Leiden, Netherlands
- Austronesian Formal Linguistics Association (AFLA), 24-26 May 2019, London, Canada
- 9th Language & Technology Conference, May 17-19, 2019, Poznań, Poland
- Syntax of the world's languages, 3-5 September 2018, Paris, France
- Vanuatu Languages Workshop, 25-27 July 2018, Port Vila, Vanuatu
- The Semantics of African, Asian and Austronesian Languages (TripleA 5), 27-29 June 2018, Konstanz, Germany

- Colloque Chronos, 4-6 June 2018, Neuchâtel, Switzerland
- 10th APLL conference, 4–5 May 2018 at Surrey University, UK
- Linguistic Evidence, 15-16 February 2018, Universität Tübingen, Germany
- 12th ALT conference, December 11-15 2017, Canberra, Australia, and the adjacent workshop 'Advances in corpus-based typology: exploring corpora of semi-parallel and indigenous texts'
- Workshop 'TAM marking in languages of Australia and the Pacific' which I organized with James Bednall and Patrick Caudal at the Australian Linguistic Society (ALS) conference 2017, 4–7 December, Sydney, Australia
- 10th Conference On Oceanic Linguistics (COOL10), July 10-15, 2017, Honiara, Solomon Islands
- Workshop on the Meaning of Past Tense Morphology, 19–21 December 2016, Göttingen, Germany
- Between EXISTENCE and LOCATION: Empirical, Formal and Typological Approaches to Existential Constructions, 1–2 December 2016, Universität Tübingen, Germany
- Students' presentations at European Summer School of Linguistic Typology 2016, 4–17 September 2016, Porquerolles Island, France
- Documentary Linguistics – Asian Perspectives, The University of Hong Kong, 6–9 April 2016

I also thank my parents and my sister and brother for their support and encouragement every step of the way. Thanks to my mom, I learned very early about the existence of linguistics and because of the efforts of my family I had the privilege to be able to pursue higher education and learn about everything I found interesting.

Finally, I thank my husband Xavier, who is my greatest support in all my scientific and personal endeavors.

Contents

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Abbreviations

1	1st person
2	2nd person
3	3rd person
A	aspect
ABS	absolutive
ACC	accusative
ADV	adverb
AG	agent
ALT	alternative
ANA	anaphoric
AND	andative
ANTCONT	anterior-continuing
APPL	applicative
ART	article
ASRT	assertive
ATTEN	attenuative
AUX	auxiliary verb
AV	actor voice
BEN	benefactive
BI	Bislama loan
CAUS	causative
CF	counterfactual
CL	classifier
COMP	complementizer
COND	conditional
CONJ	conjuction
CONT	continuous
CONTR	contrary to expectations
COORD	coordinative conjunction
COP	copula
DEF	definite

DEM	demonstrative
DET	determiner
DIR	direction
DIR1	toward speaker
DO	direct object
DP	direct possession
DS	different subject
DST	distant (distant location)
DU	dual
DUR	durative
DVN	deverbal noun
ERG	ergative
EXCL	exclusive
F	feminine
FOC	focus
FQ	Future Questionnaire
FUT	future
GEN	genitive
HAB	habitual
IAM	iamitive
IMM	immediacy
IMP	imperative
INCH	inchoative
INCL	inclusive
INCP	inceptive
IND	indicative
INF	infinitive
INT	intensifier
INTERJ	interjection
IPFV	imperfective
IQ	Iamitive Questionnaire
IRR	irrealis
IT	iterative
LINK	possessive linker
LMT	limiter
LOC	locative
M	masculine
MED	medial distance
MIN	minimal number
MOD	modality

NEC	necessity
NEG	negation
NEG1	first particle of negation in Nafsan
NEG2	second particle of negation in Nafsan
NEGV	negative verb
NEWSIT	New Situation marker
NFUT	non-future
NGEN	ngenitive (*nen* in Unua)
NMLZ	nominalizer
NOM	nominative
NREC	non-recent
NSG	non-singular
NUM	numeral
OBJ	object
OBL	oblique
PC	paucal
PERS	personal article
PFV	perfective
PL	plural
POSS	possessive
POT	potential
PQ	Perfect Questionnaire
PREP	preposition
PRF	perfect
PRO	pronominal element, refers to subject markers and proclitics
PROG	progressive
PROX	proximate first person (near speaker)
PRS	present
PRT	particle
PRTT	partitive
PSP	prospective
PST	past
PTCP	participle
PURP	purposive
Q	question marker
REAL	realis
RECP	reciprocal
RED	reduplication
REFL	reflexive
REL	relativizer

REM	remote
RT	Reference Time
SBJ	subject
SBJV	subjunctive
SEQ	sequential
SG	singular
SIM	simultaneous action
SS	same subject
STAT	stative
SUB	subordinator
T/A	tense/aspect marker
TENT	tentative
TEST	test
TOP	topic
TR	transitivizer (*-ki* in Nafsan)
TS	transitive suffix (used to allow an object suffix to be expressed)
TSit	Time of the Situation
TT	Topic Time
UT	Utterance Time
V	used for the epenthetic vowel preceding the suffixes of direct possession in Nafsan
VENT	ventive
YNQ	yes-no question

Part I

Introduction

Chapter 1

Introduction

This thesis studies the semantics of tense, mood, and aspect (TMA) expressions in Nafsan [erk][1] and other Oceanic languages, with the aim of contributing to evaluating the cross-linguistic validity of the debated categories of perfect aspect and the related iamitive gram,[2] as well as the realis and irrealis mood. In this chapter I present the main challenges of this area spanning across the fields of semantics, typology, and language description, and I outline how this thesis addresses these problems by focusing on Nafsan and Oceanic languages.

Establishing different linguistic categories as abstract representations of linguistic constructions parts from the assumption that there are specific rules and tendencies in the way the meaning of grammar is construed, and for a linguistic category to be considered cross-linguistic these tendencies should be verified across many different languages.[3] The comparison of diverse languages with the aim of finding linguistic tendencies is the task of typology. Typology seeks to classify structural types across languages and focuses on explaining patterns that occur systematically across languages (Croft, 2003). There have been several typological studies of tense, mood, and aspect cross-linguistically, including Dahl (1985), Bybee & Dahl (1989), Bybee et al. (1994), Bhat (1999), and Dahl (2000a). *The World Atlas of Language Structures* (Dryer & Haspelmath, 2013) also features several chapters on tense, mood, aspect, and evidentiality. Dahl (1985) studied TMA in 64 languages that were compared on the basis of a semantic questionnaire designed for that purpose. Bybee et al. (1994) compared 76 languages through analyzing grammars and using a questionnaire. The importance of the studies by Dahl (1985) and Bybee et al. (1994) lies especially in the innovative use of a semantic questionnaire as the principal methodology. The usage of the same questionnaire for every studied language aims at obtaining the same contexts across languages. While the questionnaire from Dahl (1985) is still widely used in language documentation and description for the identification of TMA

[1] Each language is marked with its ISO 639-3 code in brackets when it appears for the first time in the text.

[2] A gram is a grammatical item with a specific form and meaning in a particular language (Bybee & Dahl, 1989).

[3] The ideal nature of linguistic categories has been hotly debated in typology and description (see *Linguistic Typology* Volume 20, Issue 2 (Oct 2016)). This thesis does not enter the conceptual debate about the reality of linguistic categories (cf. Haspelmath, 2007). I assume that linguistic categories are measures used by linguists to describe meanings expressed in a given language and that discussing their cross-linguistic validity brings important insights into how different meanings tend to be expressed in languages of the world.

categories, there has not been another questionnaire-based cross-linguistic study on TMA of the same extent as Dahl's study.[4] There seem to be two reasons for this. The first is that there is a growing number of grammars published on underdescribed languages, so some typologists make use of grammars as the main source of data for large-scale typological comparisons (e.g. Dahl & Velupillai, 2013b; Velupillai, 2016). The second reason is that some typologists have moved away from quantifying the appearance of linguistic categories cross-linguistically (called "typological grams" by Bybee et al., 1994; Bybee & Dahl, 1989) and started quantifying precisely defined fine-grained meanings of different linguistic categories (cf. Bickel, 2007). The research on TMA in typology has not yet been fully included in studies based on quantifying fine-grained meanings. Some work has been done on Multi-Dimensional Scaling visualizations of the distribution of TMA functions in Dahl's (1985) sample by Croft & Poole (2008), and in parallel corpora by Dahl & Wälchli (2016) and van der Klis et al. (2017). However, many of these works do not necessarily identify single TMA functions, as the visualization is meant to precede the semantic analysis. The tenet of this thesis is the idea that we should combine the study of typological tendencies for clustering of TMA functions with fine-grained semantic analyses of TMA systems. While the fine-grained semantics can inform us about the extent of different functions expressed by the same category, typology is needed to assess the cross-linguistic prevalence of those functions occurring within the same category. Once the cross-linguistic validity of a certain clustering of functions is attested, semantics provides us again with tools necessary to relate these functions to each other and define the relevant categories they can fall into. This thesis aims at contributing to each of these steps, with the focus on the perfect aspect and the realis/irrealis mood as representing two important debates in the area of TMA. In the following paragraph I explain how the misconceptions concerning these categories are caused by the bias of the Indo-European tradition.

From the typological perspective, one of the main problems in the study of TMA semantics cross-linguistically is the Indo-European bias. Most TMA categories used by linguists to explain different linguistic phenomena stem from the tradition of studying grammars of Indo-European languages. The first scholarly grammars were written on Sanskrit, Greek, and Latin. For instance, the conceptual distinction between mood and modality[5] stems from the Latin distinction of indicative and subjunctive as grammatical categories on the one hand, and modal verbs and adverbials as more lexical categories on the other. Some of the categories proposed for these ancient languages have been carried over to modern Indo-European languages with similar constructions, such as indicative/subjunctive in Romance languages. However, the growing understanding of cross-linguistic diversity has challenged the applicability of many "Indo-European" categories to underdescribed languages, even when they were thought to be universal. One of the most famous cases of this in the

[4] Dahl (2007) himself mentions this fact: "At the same time, in spite of the rapid development of language typology, and although questionnaires are now a standard tool for typologists, I do not know of any investigations that have tried to apply the methodology I used."

[5] Mood is the term typically used for grammatical categories which relate to the truth-value status of a proposition as well as questions, imperatives, and optatives, and modality is a semantic expression of different ways a proposition can be judged as true either in the actual or non-actual worlds. Modality can be expressed with both lexical and grammatical material, whereas mood is a strictly grammatical category.

domain of TMA is the study of the Hopi language [hop] (Uto-Aztecan) by Whorf (1938). Whorf (1938) discovered that Hopi does not have tenses in the Indo-European sense, which made him describe Hopi independently of previously established grammatical categories, including creating some new TMA categories. Some of these are "reportive", "expective", and "nomic" assertions, which according to Whorf (1938:277) roughly correspond to non-future, future, and generic meanings, respectively. Around the same time, Dempwolff (1937) used the distinction between realis and irrealis in order to describe Jabêm [jae], a Western Oceanic language of Papua New Guinea. Dempwolff et al. (2005:12), a translation of the original Dempwolff (1939), write the following:

> "But the verb in Jabêm is not strictly a *Zeitwort* ['time word', the German term for 'verb'], because it lacks any tense. Nor is there any difference between intransitive and transitive verbs, nor any causatives or similar derived forms, nor any passive forms. Instead, the only psychological notion that is expressed with regard to the event is the speaker's judgment as to whether he is speaking about an event in the real world or only an event in his imaginary world; this is the difference between a **modus realis** and a **modus imaginativus** ["irrealis" in this translation].[6]
>
> Our present, imperfect, and perfect correspond to the realis; while we have to render the irrealis by means of our future, imperative, subjunctive, or even by our auxiliary verbs."

Dempwolff (1939) was one of the first linguists to talk about the realis/irrealis distinction as a category of mood,[7] which was subsequently adopted by many linguists working on non-Indo-European languages (for some of the first modern discussions on realis/irrealis see Mithun, 1995; Chafe, 1995). The reason Dempwolff (1939) used a label different from tense or the indicative/subjunctive distinction lies in the different nature of these categories. As we can see in the quote above, both realis and irrealis include several Indo-European categories. In Jabêm, realis expresses that the described event holds true in the actual world, which corresponds to the past and present temporal reference, as shown in (1). Irrealis expresses events which are not said to hold true in the actual world – they hold true in possible worlds and yield interpretations of future, imperative, deontic, or desiderative modalities, as shown in (2) and (3). This shows that irrealis is indeed quite different from the Romance subjunctive, which appears almost exclusively in subordinate clauses. Irrealis, on the other hand, appears in both subordinate and main clauses. Despite the differences between the traditional categories of mood, such as indicative/subjunctive, and realis/irrealis, the definition of realis/irrealis as grammatical categories determining the reference to actual and non-actual worlds describes a distinction of mood.

(1) ***kô**-sôm*
2SG.REAL-speak
'you speak, spoke, have spoken' (Dempwolff et al., 2005:12)

[6] All the brackets and bold letters are maintained as in the original, a translation by editors Joel Bradshaw and Francise Czobor.

[7] Preceded by Sapir (1930) in his description of Southern Paiute, mentioned in Elliott (2000).

(2) ***ô**-sôm*
2SG.IRR-speak
'you will speak, you would speak, speak!' (Dempwolff et al., 2005:12)

(3) ***jà**-mbic*
1SG.IRR-carry
'I shall, would, have to, want to carry' (Dempwolff et al., 2005:12)

Ever since Dempwolff's (1939) description of Jabêm, many other Oceanic languages have been described as having the realis/irrealis distinction (e.g. Bugenhagen, 1993; Lynch et al., 2002; Lichtenberk, 2016b).[8] However, the exact semantics of this distinction, as well as its cross-linguistic validity are still considered to be a debated issue in the literature. This served as the main motivation for initiating the MelaTAMP project led by Kilu von Prince and Manfred Krifka ('A corpus-based contrastive study of tense, aspect, modality and polarity (TAMP) in Austronesian languages of Melanesia (MelaTAMP)') at Humboldt University of Berlin, in whose context this thesis was written (see Section 3.2 for more details). Similarly to this thesis, one of the central goals of the MelaTAMP project is to analyze TMA expressions in Oceanic languages of Melanesia in order to illuminate the existing debates in the literature regarding the semantics of TMA categories. The main issue concerning the realis/irrealis mood is the heated debate on whether this distinction is a cross-linguistically valid linguistic category or not, which often resulted in disregard of this category in many studies of TMA semantics and typology. In seminal works on the large-scale typology of TMA categories, the realis/irrealis mood has typically been left out of the investigation. This is mainly due to three factors, the first being the Indo-European bias of expecting an indicative/subjunctive distinction. For example, Dahl (1985:53) writes the following: "categories traditionally labeled moods will not in general be among the 'major TMA categories', since these [...] predominantly occur in embedded contexts". We can see here that Dahl (1985) refers to the Indo-European *subjunctive* mood that is limited to embedded contexts. The second factor is the difficulty of separating the irrealis category from the category of future tense, and this is the case in Velupillai (2016), who writes: "if an 'irrealis' marker is stated in the source as having as its primary function to locate an event[9] after the deictic centre on the timeline, I have categorized it as a future tense for this survey." In *The World Atlas of Language Structures* irrealis is also subsumed under the future tense (Dahl & Velupillai, 2013a) and it is also not included as a feature of any other modal category. The third factor for excluding realis/irrealis from consideration is the argument that it does not constitute a cross-linguistically valid category, which was probably initiated by Trask (1993) and Bybee et al.'s (1994) large-scale typology of TMA.

The argument against the cross-linguistic validity of the realis/irrealis distinction has been made by many linguists (e.g. Bybee, 1998; de Haan, 2012; Cristofaro, 2012). Nevertheless, there are many who have defended its cross-linguistic validity (Elliott, 2000), and emphasized its importance in specific language groups, such as Amerindian (e.g. Mithun, 1995; Chafe, 1995), Australian (McGregor

[8] I found that in grammar sketches in Lynch et al. (2002) 22 out of 43 languages have the realis/irrealis distinction, and in other recent grammars chosen as a convenience sample I found realis/irrealis as a described category in 27 out of 32 languages (Krajinović, 2017a).

[9] Abbreviated as "E" in the original.

& Wagner, 2006), Papuan (Roberts, 1990), and Oceanic languages (Bugenhagen, 1993; Lichtenberk, 2016b). Bybee (1998) and de Haan (2012) argue that irrealis is used to describe a variety of linguistic phenomena which do not form a semantically coherent category, and that mood and modality are rarely expressed by a single binary distinction. Cristofaro (2012) shows that the phenomena treated as realis or irrealis, such as portmanteau subject markers, can in fact be alternatively analyzed as having a different grammatical role altogether. Another issue is that "realis" is often found in modal contexts which should be associated with irrealis, such as future (Chafe, 1995), directives (Mauri & Sansò, 2012), or counterfactuals (Exter, 2012), and irrealis is often considered polyfunctional and interrelated with other TMA categories, such as habituals and generics (see Boneh & Doron, 2010; Baker & Travis, 1997). In fact, the realis/irrealis distinction in Nafsan and several other Oceanic languages features precisely this type of problematic behavior, with realis occurring in contexts typically associated with irrealis, as can be seen in Thieberger's (2006) description of Nafsan and the corpus (Thieberger, 1995–2018). By using the Nafsan realis/irrealis as a case study and comparing it to several Oceanic languages with similar structures, I address these problems and show that what has been analyzed as either realis or irrealis can be semantically underspecified for TMA and can in fact be reanalyzed as general subject markers (see Chapter 8). Examples (4) and (5) from targeted storyboard elicitations collected during my fieldwork on Nafsan show that both "realis" and irrealis subject markers, analyzed as such by Thieberger (2006), occur in the protasis of counterfactual conditionals, respectively. Since the analysis of subject markers as realis in (4) would mean that "realis" can refer to non-actual contexts in the same way as irrealis in (5), I reanalyze this category as marking only subject person and number in Nafsan. This reanalysis is supported by the occurrence of these "realis" subject markers in a number of different modal contexts (see Chapter 8). I also show that this type of reanalysis can solve similar problems with semantically underspecified categories in other Oceanic languages, such as in Wogeo (see Section 9.1).

(4) ***a=f*** *mer mes matol, go nfag nen kin a=tai nakn-i-k*
1SG.REAL=COND CF play tomorrow and sore REL COMP 1SG.REAL=cut finger-V-1SG.DP
ke=fo mer makot
3SG.IRR=PSP.IRR again break
'If I played tomorrow, the sore I cut on my finger would bleed again.' (AK1-098-01, 00:03:39.185-00:03:57.063)

(5) ***ka=f*** *mer mes volibol matol, nakn-i-k ke=fo mra*
1SG.IRR=COND CF play volleyball tomorrow finger-V-1SG.DP 3SG.IRR=PSP.IRR bleed
'If I played volleyball tomorrow, my finger would bleed.' (AK1-004-01, 00:03:27.921-00:03:33.286)

I also argue that although Cristofaro's (2012) argument that realis/irrealis markers can be reanalyzed as having a different grammatical role altogether holds true for some languages, this fact does not invalidate the realis/irrealis distinction as a cross-linguistic category. I argue that the existence of irrealis is not necessarily defined by the binary distinction with the overt category of realis. Instead, the contrast between the semantically specified irrealis category and the realis meaning can come

about as a pragmatic inference that does not need to be encoded in the semantics of the TMA system of the language (see also Matić & Nikolaeva, 2014). Moreover, in Chapter 9 I argue that the cross-linguistic variability of irrealis can be explained as an inherent part of its semantic definition of referring to non-actual worlds within the branching-times model (von Prince et al., 2019d; von Prince, 2019). Based on examples of a few Oceanic languages, I offer evidence for the cross-linguistic validity of the irrealis category.

Thus, by solving a particular problem of realis/irrealis meaning in Nafsan, this thesis aims to offer a) a solution of semantic underspecification that can be applied to other Oceanic languages, b) a semantic definition of irrealis that can be applied cross-linguistically, and c) a relationship of pragmatic competition that can also be applied cross-linguistically.

I turn now to the perfect aspect, as the second TMA category studied in this thesis. The category of perfect aspect in its most prototypical meaning refers to the result state of a given event (e.g. Comrie, 1976; Dahl & Velupillai, 2013b). Although there are many semantic definitions proposed for the perfect category (see Section 4.1),[10] I adopt the widely accepted definition of perfect as referring to the posttime of the described situation, in the neo-Reichenbachian approach (Reichenbach, 1947) by Klein (1994). As Figure 1.1 shows, the sentence *I have arrived* in the English [eng] present perfect refers to the posttime of the arrival event. Since we are dealing with present perfect, the posttime includes the utterance time (UT) and we get an interpretation that the event of arriving has current relevance.

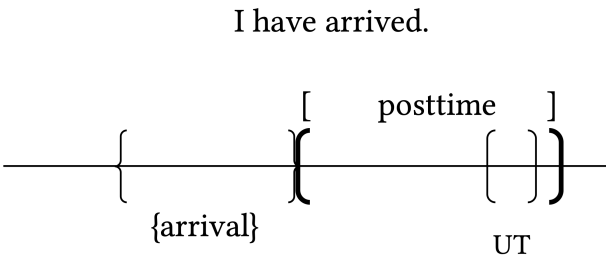

Figure 1.1: Timeline of the English present perfect

In cross-linguistic studies on perfect, the English perfect has been taken as the prototype of the perfect aspect (Dahl, 1985; Dahl & Velupillai, 2013b; Dahl, 2014b). Since the English perfect has several possible readings (resultative, experiential, universal, 'hot news', and anteriority, see Section 4.1), we expect that the perfect aspect in other languages would exhibit most or all of these functions (Dahl, 1985). In his seminal typological study on TMA, Dahl (1985) also notes that the categories that exhibit only one of the typical uses of perfect constitute a category different from the perfect. However, the semantic analysis of different functions of perfect is still a matter of debate even within the study of English, as some linguists derive them from a single definition of perfect (Klein, 1994), and others take their existence as evidence that perfect is polysemous (McCawley, 1981; Mittwoch,

[10] Perfect is also often considered to be a category with properties of both tense and aspect (e.g. Comrie, 1976).

1988; Michaelis, 1994; Kiparsky, 2002). The cross-linguistic diversity on this issue should then shed some light on the plausibility of perfect being a cross-linguistic category, by attesting whether the functions of the English perfect tend to cluster under a single TMA marker in languages of the world. Considering the typological studies which take the English perfect as the prototype, perfect appears in at least 37%[11] (24 out of 64) of the languages of Dahl's (1985) sample and in Dahl & Velupillai's (2013b) sample 48% (108 out of 222) of the studied languages have perfect. These numbers seem to be a striking piece of evidence that perfect has cross-linguistic validity. However, despite taking the functions of the English perfect as the prototype, Dahl (1985) and Dahl & Velupillai (2013b) analyze many Indo-European languages as having perfect even when their perfects do not have the same semantic restrictions as in English. For instance, German [deu] as one of the languages with perfect in Dahl (1985) and Dahl & Velupillai (2013b) famously uses the "perfect" with temporal adverbials in the past (6), which would not be possible with the English present perfect (e.g. Klein, 1992).[12] Similar problems arise with other Indo-European languages, such as French [fra] or Spanish [spa]. Although the perfect structures in these languages are used to express the functions of the English perfect and have some of the expected semantic restrictions (de Swart, 2007; Rothstein, 2008), they seem to have evolved into a much more generalized category closer to the past tense than the perfect aspect (see also Klein, 1994; Bertrand et al., 2017; Drinka, 2017). Given that the synchronic "perfect" categories in these languages differ in many relevant properties from the English perfect, following Klein (1994), in this thesis I do not consider these categories to be instantiations of the perfect category.

(6) *Ich* ***bin*** *gestern* ***angekommen.***
1SG.NOM be:1SG.PRS yesterday PTCP:arrive
'I arrived yesterday./ *I have arrived yesterday.'

Similar cases of problematic categorization of perfect are attested cross-linguistically. Quite often languages are reported to have a category with most of the functions of the English perfect, but not all, or having all the functions of the English perfect and some additional ones (see Section 4.2). Both cases are attested across Oceanic languages, and the latter is the case in Nafsan. Oceanic languages are particularly interesting because they are often described as having the category of perfect which expresses an additional function of change of state (e.g. Tongan, Koontz-Garboden, 2007). Olsson (2013) found the same type of perfect with the change-of-state meaning in several genetically unrelated languages of Asia and the Pacific, including several Oceanic languages, and analyzed it as a new typological category of "iamitives" (name derived from Latin *iam* 'already'). The iamitive is proposed to be a category that unites the resultative function of perfect and the meaning of change of state, as well as some other meanings such as expectedness, which are related to 'already' as its proposed diachronic source (see Section 4.2.2 and Chapter 5).

My work on perfect in Nafsan situates itself within the debates which discuss the cross-linguistic validity of the perfect and the iamitive categories. After identifying the challenges for the analysis

[11] This number depends on the accepted criteria for determining the category of perfect; if all languages where some kind of perfect was found are counted this percentage rises to 55% (Dahl, 1985:130).

[12] For semantic explanations of this restriction see Section 4.1.

of the perfect in Nafsan in Thieberger's (2006) description (see Section 5.1.2), I carried out targeted storyboard and questionnaire elicitations in the field and found that the perfect in Nafsan has all the relevant functions of the English perfect (e.g. Comrie, 1976; McCoard, 1978; McCawley, 1981), as shown in examples (7)-(9) (see also Thieberger, 2006). However, it also has the additional function of change of state (10), which could be taken as a piece of evidence for analyzing it as the iamitive category.

(7) Resultative
Kineu ***kai=pe*** *maa ntal su.*
1SG 1SG.PRF=PRF grate taro PFV
'I have grated the taro.' (AK1-146-02, 00:02:32.335-00:02:41.410)

(8) Experiential
Ag ***kui=pe*** *paam kapu?*
2SG 2SG.PRF=PRF eat laplap
'Have you eaten laplap before?' (AK1-151-02, 00:01:18.633-00:01:20.950)

(9) Anteriority
Me malnran kin i=pan check, i=pan lak tp̃er ni waak me i=laka na waak
but when COMP 3SG=go check:BI 3SG=go see fence of pig but 3SG=see COMP pig
ki=pe *p̃rai tp̃er,* ***ki=pe*** *sef.*
3SG.PRF=PRF break fence 3SG.PRF=PRF escape
'But when he went to check, he went to see the fenced off pig and he saw that the pig had broken the fence, it had escaped.' (AK1-022-01, 00:03:24.726-00:03:37.121)

(10) Change of state
Malfane nal-u-k ***ki=pe*** *taar.*
now hair-V-1SG.DP 3SG.PRF=PRF white
'My hair is blond now.' (AK1-146-03, 00:03:31.991-00:03:33.853)

In Chapter 5 I analyze the Nafsan perfect in detail and take its features and language-internal processes, such as aspectual coercion (Koontz-Garboden, 2007), as evidence to argue for the cross-linguistic validity of the perfect and against postulating the new iamitive category. In a typological approach, I compare my findings about Nafsan with four other Oceanic languages whose properties of the perfect bear relevance for the iamitive/perfect debate (see Chapter 6). By creating a classical semantic map (cf. Haspelmath, 2003) of the perfect, I argue that the semantic space of Oceanic perfects and related categories covers the aspectual area of the English-style functions of perfect and the change-of-state meaning, assumed to be the core iamitive meaning. Since these semantic spaces occupied by the analyzed Oceanic categories can be explained by existing aspectual categories and independent language-internal processes, I conclude that the iamitive as defined by Olsson (2013) is not a cross-linguistically relevant category. In addition, I argue that the spread of a specific category over most of the perfect functions but not all is also conditioned by paradigmatic effects of blocking. The analysis of the perfect aspect presented here provides a theoretical contribution to the understanding of the cross-linguistic semantics of the perfect aspect, which can also be used as a methodological guide to identifying aspectual categories in underdescribed categories.

Regarding the theoretical approach of this thesis, it is necessary to mention one caveat. As shown in this introduction, the main research questions motivating this study are the debated questions about the categorial status of the realis/irrealis mood and the perfect aspect, and the cross-linguistic validity of their proposed semantic definitions. For this reason, this thesis takes any theoretical approach that can adequately address these fundamental questions. Given that the debates surrounding the realis/irrealis and the perfect have already set particular theoretical directions, this work necessarily inherits some theoretical assumptions that are prominent in both debates. For instance, while the realis/irrealis debate has been prominent in the typological studies, the perfect has comparatively been more heavily studied in formal semantics. This necessarily leads to different initial expectations about the restrictiveness and the degree of formalization of semantic definitions of these categories. While this thesis has both the formal and the typological angle in the analysis of both realis/irrealis and perfect, given the two different starting points regarding the two topics, the discussion on the realis/irrealis mood has a more of a prototype-based cross-linguistic approach, and the definition of the perfect aspect can be seen as slightly more restrictive and formal, despite allowing for cross-linguistic variability. However, this difference should not be seen as a theoretical setback, but rather as an indication that both of these theoretical approaches can be simultaneously valid, as this thesis provides evidence that the cross-linguistic definitions of the realis/irrealis mood and the perfect aspect can be successfully described by typological and formal semantic methods.

This thesis is organized as follows. In Chapter 2 I introduce the basic information about Nafsan and Oceanic languages, including the morphosyntactic structure of Oceanic languages and previous work on Nafsan by Thieberger (2006). Chapter 3 outlines the methodology used in this thesis, namely the corpus work, semantic fieldwork, and the typological perspective. In Chapter 4 I present the semantic definitions of the perfect and the related categories of iamitives and 'already', as well as the discussion on their cross-linguistic validity in the context of Oceanic languages. That chapter foreshadows the questions addressed in Chapter 5, in which I analyze all the meanings associated with the perfect, iamitives, and 'already' in Nafsan, and provide evidence that the definition of the English-style perfect aspect (Klein, 1994) is sufficient to account for all the attested properties, especially when different language-internal processes such as aspectual coercion are considered. Chapter 6 studies the meanings of the perfect, iamitives, and 'already' in four additional Oceanic languages – Toqabaqita [mlu], Unua [onu], Niuean [niu], and Māori [mri]. On the basis of the data of these languages and Nafsan, I create a semantic map of the semantic space of the perfect, iamitives, and 'already', and show that the spread of the functions expressed by single markers in these languages does not match the proposed iamitive functions, despite the existence of the meaning change of state. Turning to the realis/irrealis distinction, in Chapter 7 I present the current state of the art regarding the realis/irrealis debate and other issues related to the semantics of languages without the grammatical marking of tense, foreshadowing the questions relevant for the analysis of realis and irrealis in Nafsan in Chapter 8. In Chapter 8 I focus on the distribution of the realis and irrealis mood in Nafsan and offer a detailed semantic analysis of these categories. In a typological and cross-linguistic perspective, in Chapter 9 I present evidence that the analysis of realis and irrealis as proposed for Nafsan can be applied to other Oceanic languages, including the semantic defini-

tion of irrealis as a cross-linguistically valid category. Chapter 10 is a conclusion which summarizes the main arguments made in the thesis. Appendix B provides all the Nafsan data I elicited through translation-based questionnaires, such as Dahl (2000c,b).

Part II

Background

Chapter 2

Nafsan and Oceanic languages

2.1 Location and genetic affiliation

Oceanic languages form a genetic subgroup within the larger Austronesian family, and are spoken across Melanesia, Micronesia, and Polynesia. Oceanic languages were first established as a subgroup of Austronesian by Dempwolff (1937), who postulated the existence of *Urmelanesisch* (Proto Melanesian), nowadays called Proto-Oceanic. Lynch et al. (2002) count 450 to 600 languages classified as Oceanic. The largest Oceanic language is probably Fijian, spoken by around 300,000 people, and it is followed by Polynesian languages, such as Samoan [smo], Kiribati [gil], and Tongan [ton] (Lynch et al., 2002:10-12). In Melanesia the number of speakers per language is significantly smaller than in Polynesia. According to Lynch et al. (2002:12), in Papua New Guinea (PNG) and Solomon Islands the average populations amount to 4,000 speakers per language (including Oceanic and Papuan languages), 2,000 in New Caledonia, and 1,500 in Vanuatu. Melanesia is also recognized as one of the most linguistically diverse areas of the world. Vanuatu alone, as a country with the population of 272,459 people,[1] has been said to have 138 different languages (François et al., 2015).

Austronesian
Malayo-Polynesian
Central-Eastern Malayo-Polynesian
Eastern Malayo-Polynesian
Oceanic

Figure 2.1: Oceanic within the branches of the Austronesian family

The main focus of this thesis is the study of Nafsan, also known as South Efate. The geographical name South Efate has been recently substituted by the name speakers refer to their language: *nafsan*, which means 'language' (see Thieberger, 1995–2018). Nafsan is spoken in the south of the island of

[1]Information from the 2016 Mini Census of Vanuatu, available at `https://vnso.gov.vu/index.php/mini-census-2016`.

Efate, situated in Shefa Province in Vanuatu (see Figure 2.2),[2] on the outskirts of the capital Port Vila, in the villages of Erakor, Eratap, and Pango, see Figure 2.3. The corpus data of Nafsan were collected in Erakor and Eratap (Thieberger, 1995–2018) and I collected my fieldwork data in Erakor (Krajinović, 2017b). Lynch et al. (2002) estimate that Nafsan is spoken by 5,000-6,000 people, but this number must be higher today. The 2016 Mini Census of Vanuatu counts 8,918 inhabitants in Erakor, 6,640 in Eratap, and 2,326 in Pango. Given that the census did not collect language data and that there are migrations from other islands of Vanuatu to these villages, it is uncertain how many people are speakers of Nafsan. Nafsan is spoken alongside Bislama [bis], the official language of Vanuatu, and education is carried out in English and French. Lynch et al. (2002) classify Nafsan as belonging to the South Efate/Southern Melanesian linkage (see Figure 2.4), which sets it genetically apart from the North Efate languages (see also Tryon, 1976), such as Lelepa [lpa] (Lacrampe, 2014), Nguna [llp] (Schütz, 1969), and Namakir [nmk] spoken on Shepherd Islands situated to the north of Efate (Sperlich, 1991). There is one more language spoken on the island of Efate and that is Ifira-Mele [mxe], a Polynesian outlier spoken in the villages of Ifira and Mele in the vicinity of Port Vila, see Figure 2.3.

Apart from the study of Nafsan, in a typological perspective I compare the Nafsan structures with several other Oceanic languages, as well as languages from other families with relevant structures, with the aim of establishing the semantic spaces of studied TMA categories, and providing cross-linguistically applicable analyses of certain categories. Appendix A contains a list of all the examples in this thesis and the languages they represent, accompanied by their ISO 639-3 codes. The Oceanic languages which are analyzed in more detail in this thesis are represented together with their genetic relationships in Figure 2.4.

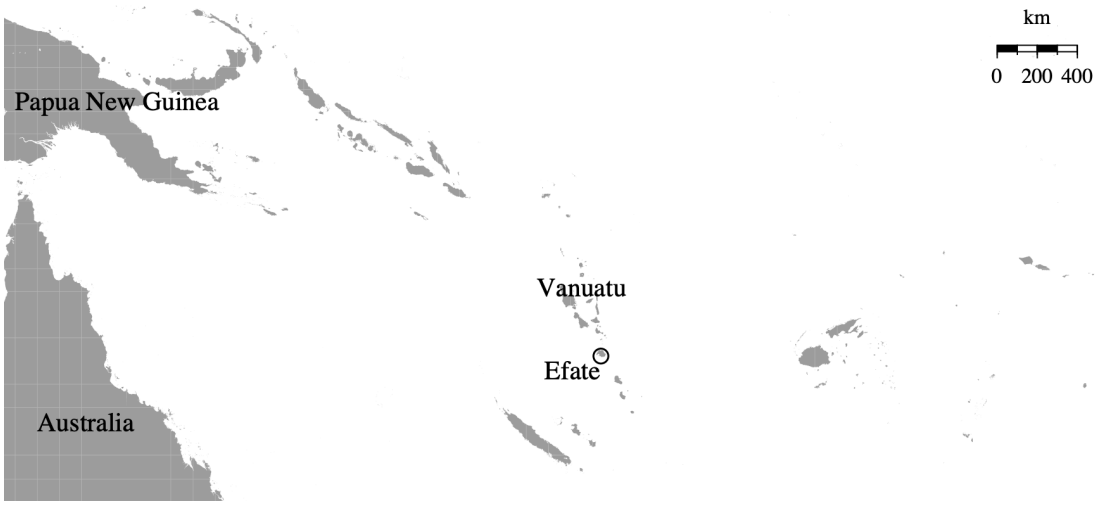

Figure 2.2: Location of Vanuatu and the island of Efate

[2] I created all the maps in this thesis with the Generic Mapping Tools (Wessel et al., 2019).

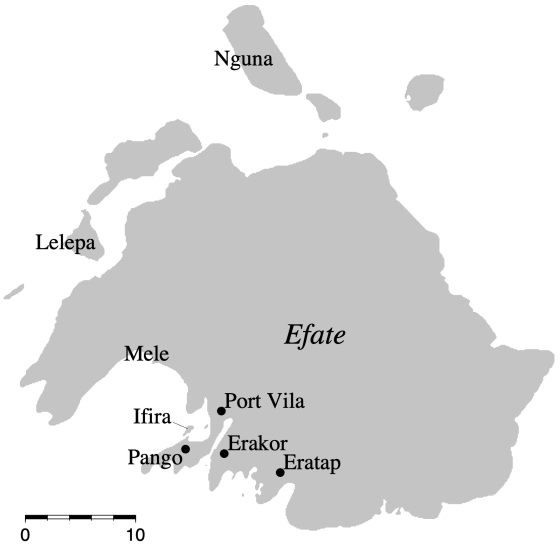

Figure 2.3: A map of the island of Efate with bullet locations where Nafsan is spoken

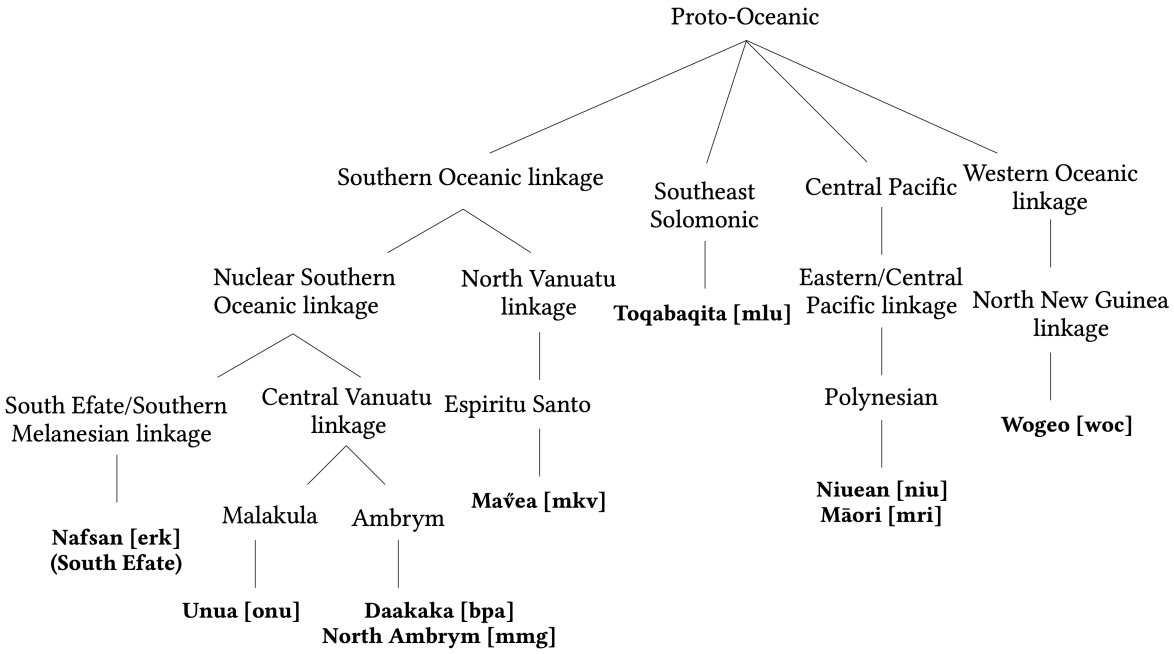

Figure 2.4: Genetic classification of Oceanic languages analyzed in more detail in this thesis (in bold), classification from Ross et al. (2016) and Lynch et al. (2002), and language data from Glottolog (2017)

2.2 Basic structure and TMA in Oceanic languages of Melanesia

In this section I describe some salient structural properties of Oceanic languages of Melanesia, with special emphasis on the verb phrase and TMA properties that will be addressed in the following chapters. As we can see from Figure 2.4, apart from two Polynesian languages (Niuean and Tongan), all the other languages studied in this thesis are from the Melanesian region. Given that Melanesian linguistic features differ in many ways from their Polynesian counterparts, this introduction of the basic Oceanic structures is limited to the languages of Melanesia. Polynesian structures relevant for this study are addressed in the chapters where they first appear. The choice of represented Oceanic languages of Melanesia in this section is based on a convenience sample of languages with typological properties of interest for this thesis. Nevertheless, the represented languages are intended to serve as examples of Oceanic properties that are widespread in the region.

Oceanic languages tend to have a simple CV syllable structure and small phoneme inventories with few complex articulations. However, in Melanesia there are some exceptions to this general trend. For instance, Nafsan has lost many medial vowels which resulted in the occurrence of numerous consonant sequences. The loss of medial vowels can be illustrated with the word *nafsan* 'language' that has been recorded as *nafisan* in 1950s by Pastor Sope (Thieberger, 2006:3). Another feature of Nafsan and other Oceanic languages is the existence of two labiovelar stops[3] with a phonemic contrast (Lynch, 2002; Thieberger, 2006). Examples (1) and (2) from Nafsan show two minimal pairs contrasting the labiovelar stop /p̃/ with /p/, and the labiovelar nasal /m̃/ with /m/.

(1) p̃as [k͡pas] 'to chase' vs. pas [pas] 'dolphin' (Thieberger, 2006:47)

(2) m̃ol [ŋ͡mol] 'to be alive' vs. mol [mol] 'hunt (for coconut crab)' (Thieberger, 2006:51)

Nouns in Oceanic languages typically do not have the morphological categories of case, number, and gender, but there are other distinctions that are frequently morphologically marked. At the lexical level, some languages distinguish nouns according to whether they are personal, locational, or common nouns. In Nafsan, for instance, locational nouns are marked with the locative affix *e-*, as shown by the contrast between examples (3) and (4). The article *na* in (3) has diachronically fused with nouns and in the synchronic system it can be analyzed as a formative element of common nouns.[4]

(3) ***na****-sum̃*
DET-house
'house' (Thieberger, 2006:76)

(4) ***e****-sum̃*
LOC-house
'at the house' (Thieberger, 2006:76)

[3] This terms refers to consonants which are doubly articulated at the velum and the lips, as exemplified with [k͡p] and [ŋ͡m] in (1) and (2). I do *not* use this term to refer to labialized velars, such as [k^{w}].

[4] About the loss of articles in Southern Oceanic languages see Lynch (2001).

Some Oceanic languages have a distinction between definite and indefinite articles, and we can see an example of this in Maʋ̌ea [mkv]. Examples (5) and (6) show the use of the definite article *le* and the indefinite article *aite*, respectively. Examples (7) and (8) show the same type of distinction in Nafsan with the definite determiner *ne* and the indefinite *skei* 'one'.

(5) [Maʋ̌ea (North Vanuatu)]

ko-adi sile nao dam ***le****?*
2SG-can give 1SG yam DET.DEF
'Can you give me the yam?' (Guérin, 2011:150)

(6) [Maʋ̌ea (North Vanuatu)]

Ok, me ro ka-var sur tamlese ta-tuva ***aite*** *[...]*
ok FUT then 1SG.IRR-talk about old.man CL-Tutuba one
'Ok, I will talk about an old Tutuba man [...]' (Guérin, 2011:149)

(7) [Nafsan, context: two friends tried to reach for bananas that were merely a reflection in the water, from "Bundle of bananas" (von Prince, 2018a)]

Komam ra=mro-ki-n na ple nanre ***ne*** *i=to naum̃.*
1PL.EXCL 1DU.EXCL=think-TR-3SG.OBJ COMP bundle banana DET.DEF 3SG=stay river
'We thought the bananas were in the river.' (AK1-021-01, 00:12:13.920-00:12:22.511)

(8) [Nafsan, context: Bong is preparing a kastom ceremony, from "Fat pig" (von Prince, 2018b)]

*Me nen ke=freg kastom ga nen i=mur waak ke=****skei****.*
but PURP 3SG.IRR=make.IRR kastom.ceremony 3SG.POSS DET.DEF 3SG=want pig 3SG=one
'In order to do the kastom ceremony he needs a pig.' (AK1-028-01, 00:00:15.755-00:00:18.623)

Nouns can be classified as alienably and inalienably possessed, as examples (9) and (10) illustrate with the alienable and inalienable reading of the noun *bura* 'blood' in Daakaka [bpa]. In (9) the noun 'blood' is marked by a transitivizer[5] and interpreted as a body part relationship and in (10) it is marked by a possessive classifier and a possessive linker and interpreted with the sense of ownership (von Prince, 2016).

(9) [Daakaka (Central Vanuatu)]

*bura=****ne*** *vyanten en=te*
blood=TR person DEM=MED
'this person's blood' (body part reading) (von Prince, 2016:70)

(10) [Daakaka (Central Vanuatu)]

bura ***ø-e*** *vyanten en=te*
blood POSS.CL-POSS.LINK person DEM=MED
'this person's (animal) blood' (ownership reading) (von Prince, 2016:70)

[5]Besides marking transitivity on verbs, in Daakaka the transitivizer *(a)ne* is also used for increasing valency, and thus marking inalienability, with intransitive nouns and pronouns (von Prince, 2015:161). Intransitive nouns are defined by von Prince (2016:73) as nouns that cannot express inalienable possession by simple juxtaposition with another noun or noun phrase, without any additional morphology.

Regarding the pronominal system and person marking, most Oceanic languages have clusivity distinctions in the first person and some languages have up to four different number distinctions. One such case is Daakie [ptv], with singular, dual, paucal, and plural number. In example (11)-(13) we can see how different numbers of participants – two, three, and ten – require the person marking in dual, paucal, and plural, respectively.

(11) [Daakie (Central Vanuatu)]
timaleh ***woro-ló*** ***kolo****-m* *pwet/du pán em*
child number-two 3DU-REAL stay under house
'Two children were in the house.' (Krifka, 2018a)

(12) [Daakie (Central Vanuatu)]
timaleh ***woro-syee*** ***kiye****-m* *du pán em*
child number-three 3PC-REAL stay under house
'Three children were in the house.' (Krifka, 2018a)

(13) [Daakie (Central Vanuatu)]
timaleh ***songavi la****-m* *du pán em*
child ten 3PL-REAL stay under house
'Ten children were in the house.' (Krifka, 2018a)

The pronominal systems in Oceanic languages make the distinction between free pronouns and subject markers that typically attach to the verb either as clitics or prefixes. In examples (11)-(13) we saw different subject-marking prefixes, but Daakie also has free pronouns. Table 2.1 shows the full paradigm of pronouns and subject markers in Daakie. Despite the similarity in form between the two the paradigms, the subject markers are significantly shorter and sometimes have a different form altogether. As we can see in (11)-(13) the subject markers are typically prefixed to a TMA marker.

Table 2.1: Pronouns and subject markers in Daakie, from Krifka (2018a)

Person	Singular	Dual	Paucal	Plural	Forms
1.EXCL	*ngyo*	*komoo*	*kidyee*	*kemem*	Pronoun
	na-	*komo-*	*kidye-*	*keme-*	Subject Marker
1.INCL		*adoo*	*adyee*	*et*	Pronoun
		do-	*dye-*	*da-*	Subject Marker
2	*ngyak*	*kamoo*	*kamdyee*	*kimim*	Pronoun
	ko-	*ka-*	*ka-*	*ki-*	Subject Marker
3	*ngye*	*koloo*	*ki(l)yee*	*ngyee*	Pronoun
	ø	*kolo-*	*kiye-*	*la-*	Subject Marker

Although many Oceanic languages in Melanesia exhibit pronominal patterns similar to Daakie, the grammatical status of subject markers can differ in respect to the degree of morphological separation from TMA markers. I identify four levels of morphological separation-fusion between the subject markers and TMA markers, shown in (14).

(14) Degrees of morphological separation-fusion between the subject markers and TMA markers:

a. Independent morphology
b. Adjacent and partially dependent
c. Morphologically dependent (integrated in the paradigm)
d. Portmanteau TMA subject markers

The TMA markers which are completely morphologically independent from the subject markers (14a) typically occupy the preverbal or the postverbal position. Example (15) exemplifies this preverbal position with the modal/sequential marker *kabo* in Saliba [sbe], and (16) with the prospective *ha* in Koro [kxr]. Both *kabo* and *ha* precede the verb marked with the subject marker prefixed to the verb. Markers occupying this preverbal position tend to have modal meanings or future reference.

(15) [Saliba (Papuan Tip)]
ku-lao na malaitom ***kabo*** *ku-lao-ma*
2SG-go CONJ next.day will/then 2SG-go-hither
'You go now, and tomorrow you will come (back).' (Margetts, 1999:13)

(16) [Koro (Admiralty Islands)]
mwah ***ha*** *you k-u me*
next.day PSP 1SG.SBJ IRR-1SG come
'Tomorrow I'll come.' (Cleary-Kemp, 2015:23)

The postverbal position is usually occupied by aspectual markers and depending on the description of a given language, markers in this position can be labeled as perfective (Nafsan, see Section 5.3.2), perfect, as in Neverver [lgk] (Barbour, 2012) and Lelepa [lpa] (Lacrampe, 2014), or 'already', as in Unua (Pearce, 2015a). Example (17) offers an example of the postverbal particle *ju* 'already' in Unua, analyzed in more detail in Section 6.3.3.

(17) [Unua (Central Vanuatu)]
Rate tebeg veverngo re-rex ***ju***
3PL all now 3PL-married already
'They are all married now.' (Pearce, 2015a:321)

The second possibility regarding the degree of morphological fusion between the subject markers and TMA markers is adjacency without complete morphological dependency (14b). We saw this situation in Daakie (11)-(13), where subject markers were attached to the realis marker *-m*. However, the realis marker maintains its full form *mwe* or a morphophonologically conditioned variant thereof when there is no subject marker that it can attach to, as is regularly the case in 3SG, as exemplified in (18).

(18) [Daakie (Central Vanuatu)]
timaleh soo ***mwe*** *pwet pán em*
child one REAL stay under house
'A / one child was in the house.' (Krifka, 2018a)

In Daakaka, a language closely related to Daakie, the TMA markers cliticize to the preceding subject marker ending in a vowel. However, if there is no such preceding word, they will form a monosyllabic independent word, just like in Daakie. In examples (19) and (20) we can see that the realis marker can be realized as a clitic *=m* or as a monosyllabic word *mwe* due to the null subject marker (*nge* 3SG in (20) is a full independent pronoun and not a subject marker von Prince 2015:155), respectively.

(19) [Daakaka (Central Vanuatu)]
*Na=**m** vyan stoa.*
1SG=REAL go store
'I'm going to the store./ I went to the store.' (von Prince, 2015:235)

(20) [Daakaka (Central Vanuatu)]
*maa nge **mwe** kuk=ane dom pi∼pili.*
dove 3SG REAL cook=TR yam RED∼red
'The dove cooked/cooks red yam.' (von Prince, 2015:231)

In some Oceanic languages the adjacent TMA markers similar to the realis marker *m* in (11)-(13) and (19) became systematically integrated into the regular paradigm of subject markers where different morphemes can be identified for person, number, and mood (14c). One such language is Neverver, spoken on the island of Malakula, Vanuatu. Neverver has a system of subject markers in which the morphemes for person, number, and mood can be morphologically identified (Barbour, 2012:165). As we can see in Table 2.2, every subject marker is composed by the person marking, clusivity/number marking (Num(1) in Table 2.2), mood marking, and number marking (Num(2) in Table 2.2), each occupying specific positions within the form. The paradigm of subject markers that lacks the mood marker is labeled as realis, and irrealis is constructed by combining the unmarked realis and the irrealis mood marker *m* (quite different from the *realis m* in Daakaka and Daakie).

In some Oceanic languages, the morphological boundaries between TMA and subject markers are not as clear as in Neverver. In this case, described in (14d), the adjacent TMA and subject markers diachronically merged and resulted in portmanteau TMA subject markers (Ross & Lithgow, 1989; Moyse-Faurie & Lynch, 2004), which denote the person and number of the subject as well as TMA values. This is the case in Nafsan (see Section 2.3). Many Oceanic languages with portmanteau TMA subject markers display asymmetrical paradigms with unpredictable syncretisms, and sometimes with a lack of TMA distinctions in certain persons. One typical example of such subject-marking paradigm is a Western Oceanic language Wogeo [woc] spoken on the island of Wogeo in the north of Papua New Guinea (Exter, 2012), see also Section 9.1. Its irrealis paradigm of subject markers also appears to be morphologically based on the realis paradigm, as we can see in Table 2.3, but there is no systematic way of forming irrealis. In some cases, as in 1DU, a *g* element is added as a suffix and

Table 2.2: Example of subject markers in Neverver by Barbour (2012:165)

	Marker	Person	Num(1)	Mood	Num(2)
1.SG.REAL	*ni*	*n*	*i*		
1.SG.IRR	*ni**m***	*n*	*i*	*m*	
1.INCL.DU.REAL	*nir*	*n*	*i*		*r*
1.INCL.DU.IRR	*ni**m**r*	*n*	*i*	*m*	*r*
1.EXCL.DU.REAL	*nar*	*n*	*a*		*r*
1.EXCL.DU.IRR	*na**m**r*	*n*	*a*	*m*	*r*
1.INCL.PL.REAL	*nit*	*n*	*i*		*t*
1.INCL.PL.IRR	*ni**m**t*	*n*	*i*	*m*	*t*
1.EXCL.PL.REAL	*nat*	*n*	*a*		*t*
1.EXCL.PL.IRR	*na**m**t*	*n*	*a*	*m*	*t*
2.SG.REAL	*ku*	*k*	*u*		
2.SG.IRR	*ku**m***	*k*	*u*	*m*	
⋮					

sometimes as a prefix, as in 1SG. Additionally, 3SG has *d-* instead of *g-* and in paucal and plural many realis and irrealis forms are the same.

Table 2.3: Subject markers in Wogeo (Exter, 2012:181), in their forms as they would appear with the verb *lako* 'go'

	Realis	Irrealis
1SG	*o-*	***g**o-*
2SG	*go-*, *ko-*	*go-*
3SG	*e-*	***d**e-*
1DU	*to-*	*to**g**-*
2DU	*kad-*	
3DU	*do-*	*do**g**-*
1PC	*to-*	*to**g**-*
2PC	*koto-*	
3PC	*doto-*	
1PL	*ta-*	
2PL	*ka-*	
3PL	*da-*	

A similar situation is found in Mavĕa, where the realis/irrealis distinction is attested only for 1SG and 3SG, as shown in Table 2.4. The forms of subject markers cannot be easily segmented in the mood-indicating and the person/number-indicating parts, which shows they are not compositional.

This is clear if we compare *na* 1SG with *ka* 1SG.IRR and *mo* 3SG with *i* 3SG.IRR.

Table 2.4: Singular and plural subject markers in Maʋ̌ea by Guérin (2011:211)

	Realis	Irrealis
1SG	***na-***	***ka-***
2SG		*ko-*
3SG	***mo-***	***i-***
1PL.INCL		*da-*
1PL.EXCL		*ki-*
2PL		*ki-*
3PL		*ra-*

The most extreme type of fusion between the TMA markers and the verb is the expression of the realis/irrealis or non-future/future by the stem-initial mutation of the verb, also called root-initial alternation by Crowley (1982, 1991) and oral/nasal alternation by Lynch (1975). The latter name is motivated by the fact that in many Oceanic languages of Central Vanuatu, such as Lewo [lww], Paamese [pma], and Nguna, verbs have initial oral or non-nasal consonants in the irrealis and initial nasal consonants in the realis, as shown for Paamese in Table 2.5. Lynch (1975) shows that the nasal mutation of the verb stem in realis or non-future is a result of the fusion of the Proto-Oceanic preverbal realis particle **m(V)* (cf. Daakie and Daakaka above) with the initial consonant of the verb. He also shows evidence of the irrealis particle **na* merging with verb stems in some languages. However, the stem-initial mutation does not necessarily involve an oral/nasal contrast, as we can see in the last row in Table 2.5. Similarly, in Nafsan the stem-initial mutation does not have nasal consonants in the synchronic system, as it refers to the contrast between the initial *p-* and *f-* (see Section 2.3.1).

Table 2.5: An example of the stem-initial mutation in Paamese from Lynch (1975:90,92), and Ray (1926) cited in Lynch (1975:90)

Alternation rule	Future	Non-future	Meaning
v > *m*	***v****oasi*	***m****oasi*	'kill'
V > *mV*	*um*	***m****um*	'work'
C > *muC*	*tisi*	***mu****tisi*	'write'
t > *r*	***t****ou*	***r****ou*	'abide'

So far we have seen languages with a binary realis/irrealis distinction, but there are also cases of tripartite distinctions which typically include realis, irrealis, and an aspectual category. One such case is Sivisa Titan [ttv] for which Bowern (2011:82-88) identifies the paradigms of realis, irrealis, and perfective. In Table 2.6[6] I show these paradigms and I propose a possible morphological separation of

[6]This table shows only the distinctions relevant for distinguishing the three different paradigms. Realis also has specific

Table 2.6: Subject markers in Sivisa Titan (Admiralty Islands), based on Bowern (2011:82-88)

	Realis	Irrealis	Perfective
1SG	*u*	***k**-u (k-o)*	***k**-u-**ne***
2SG	*a*	***k**-o (k-u)*	***k**-o-**ne***
3SG	*i*	***k**-i*	***k**-i-**ne***
non SG	[more distinctions]	***k**-a*	***k**-a-**ne***

the irrealis and perfective morphemes as opposed to person/number parts. Although the paradigms in Sivisa Titan look entirely compositional at first glance, we can see that 2SG in irrealis and perfective takes *o* instead of the unmarked *a* used in realis, and irrealis and perfective take *a* for non-singular, while realis has more pronominal distinctions in this field, which are expressed by forms equivalent to independent pronouns (see Bowern, 2011:82). Additionally, due to vowel harmony 1SG and 2SG irrealis can also have forms *k-o* and *k-u*, respectively (see Bowern, 2011:83).

In comparison to the languages mentioned so far, Sivisa Titan seems to be somewhere in between the degree of morphological fusion found in Neverver and the portmanteau morphemes in Wogeo and Maŭea. In the context of this study, Sivisa Titan provides an important example of a tripartite TMA distinction because a surprisingly similar system in both form and function is found in Nafsan. This also applies to Koro (Admiralty Islands) which has the same three TMA categories expressed by the portmanteau subject markers as in Nafsan: unmarked realis, irrealis, and perfect.

Based on the examples we have seen in this section, we can extrapolate a synchronic typological abstraction of a simplified structure of available TMA slots in Oceanic languages of Melanesia, presented in (21).

(21) TMA_1 + SBJ.PRO + TMA_2 + verb + TMA_3

The preverbal TMA_1 and the postverbal TMA_3 slot have been exemplified on Saliba (15) and Unua (17), respectively. I focus now on the TMA_2 slot, which is situated between the subject marking and the verb. While we have seen examples of the realis marker in this slot in Daakie and Daakaka, we have not yet seen cases where TMA_2 is divided in several other TMA slots. In many Oceanic languages, these TMA slots obey strict ordering principles, and since several markers can co-occur, this frequently results in highly complex structures. In order to illustrate this, we can look at the ordering of the elements of the predicate, also called *verbal complex* in Oceanic literature, in Lelepa (22) (Lacrampe, 2014:325). The elements in bold are the only obligatory elements. If we focus on the area between the subject marker and the verb (*preverbal complex*), we can see that the subject marker is followed by several ordered slots, including TMA, a numeral and negation. In example (23) the first three slots are filled with the obligatory subject marker, irrealis, and the modal marker 'maybe'.

pronouns for dual, paucal, and plural.

(22) **SBJ=** IRR A/MOD[7] NUM NEG AUX[8] ADV RECP/REFL **Verb** post-verb PRF ADV OBL A/DIR[9]

(23) ***e=ga*** ***lag*** *puro* *ri...* *e=puro.*
3SG=IRR maybe be.empty sorry 3SG=be.empty
'It may be empty, sorry... it is empty.' (Lacrampe, 2014:403)

In Maŵea, the verbal complex exhibits similar compositional properties. In (24) we can see that the subject prefixes are once again followed by TMA slots, negation, and numerals. This is exemplified in (25), where every slot of the preverbal complex is filled.

(24) **SBJ-** COND- NEG- IT-/INCP- NUM- IPFV- **Verb** ADV =TR =OBJ (Guérin, 2006:210)

(25) ***Ra-mo-sopo-ḿe-r-lo-ŵa.***
3PL-COND-NEG-IT-DU-IPFV-go
'If they (two) do not go anymore.' (Guérin, 2006:219)

These kinds of rich combinatorial possibilities of TMA marking also plays a role in the TMA system of Nafsan (see Section 2.3) and it is present to varying degrees in most of the Melanesian languages mentioned in this thesis.

Another property of Oceanic languages worth mentioning in this section is the verbal behavior of property words in predicative function (van Lier, 2017) and the flexibility of lexical classes in general (van Lier, 2016). In her study of the typology of property words in a balanced sample of 36 Oceanic languages, van Lier (2017) found that in 72% of the languages in her sample the major property word class is a verbal construction in predicative function. In the case of Nafsan, Thieberger (2006:85) shows how different property words can carry more or less verbal morphology, depending on the lexeme. Example (26) shows the word *wi* 'good' in Nafsan, which can function as a modifier (26a), but it can also carry all types of verbal morphology, including the subject person/number and TMA marking, as shown in (26b) and (26c), as well as the transitive marker *-ki* in (26d). This shows that, in comparison to the Indo-European parts of speech, *wi* 'good' is flexible between the categories of verbs and adjectives. Thieberger (2006:178) also notes that there are stative intransitive verbs in Nafsan, with property meanings, which cannot function as modifiers, as exemplified with *semsem* 'happy' in (27).

(26) a. *tesa* ***wi***
child good
'good child'

b. *tesa* *i=**wi***
child 3SG.REAL=good
'the child is good'

c. *ke=fo* ***wi***
3SG.IRR=PSP.IRR good
'it will be good'

[7] Aspectual and modal particles.
[8] Expresses aspect, modality and motion.
[9] Particles that express aspect and direction.

d. ***wi***-*ki*
good-TR
'be good for' (Thieberger, 2006:85)

(27) *A*=***semsem*** *ni natkon preg te-namrun.*
1SG.REAL=happy BEN village make DET-something
'I am happy to do something for the village.' (Thieberger, 2006:220)

There are many other characteristics of Oceanic languages that were not discussed in this section. Some of them include verb reduplication (Harrison, 1973; Haji-Abdolhosseini et al., 2002), serial verbs (Crowley, 2002), polyfunctionality and optionality of functional words (e.g. Lichtenberk, 2016a; Bril, 2007), and lexical underspecification in comparison to Indo-European languages (see Section 8.6.2).

2.3 TMA in Nafsan

In this section I outline the previous work on TMA in Nafsan (Section 2.3.1) and I introduce some terminological differences between my work and Thieberger's (2006) work on Nafsan (Section 2.3.2).

2.3.1 Previous work on Nafsan

The first modern linguistic work on Nafsan was done in the areas of phonology and its genetic classification within different Oceanic groups (e.g. Tryon, 1976; Clark, 1985; Lynch, 2000, 2004).[10] The work I discuss in this section and rely on to form my hypotheses about TMA in Nafsan is the first reference grammar of Nafsan by Thieberger (2006), and the accompanying corpus of data collected by Thieberger (1995–2018). All the examples taken from Thieberger (1995–2018) contain a reference to their identifiers in the corpus, and are in this way distinguished from the data I collected, which starts with the reference to my PARADISEC collection, AK1 (Krajinović, 2017b). More recent studies published by my co-authors and myself (von Prince et al., 2019e,d; Krajinović, 2018; Krajinović, 2019) were written as part of the project in the context of which this thesis was written (see Section 3.2) and are addressed and cited in the relevant discussions (see also Preface). Billington et al. (2018, submitted) have also done work on the phonetics of Nafsan.

Nafsan is an SVO language with the predicate structure consisting of several ordered morphosyntactic slots, shown in Table 2.7. Elements in different slots are in a fixed order relative to each other and the elements of the same slot cannot co-occur. The only obligatory elements of the verbal complex are the subject markers and the verb (in bold). The first slot is occupied by the obligatory subject markers which are portmanteau markers of either realis, irrealis, or perfect. They cliticize to any following word within the preverbal complex, such as a TMA marker, an auxiliary verb, a benefactive phrase, or the verb (Thieberger, 2006). Table 2.7 lists all the available categories according to their morphosyntactic position in the predicate (Thieberger, 2006:243). We can see that the preverbal slots include TMA markers, negation, and other grammatical elements, such as benefactive, and in the

[10]For a list of missionary works on Bible translations since 1868 see Thieberger (2006:38) and about the work of the missionary Daniel Macdonald on Efate languages see Thieberger & Ballard (2008).

Table 2.7: Verbal complex in Nafsan from Thieberger (2006:243)

SBJ=	Slot 2	Slot 3	BEN	V=OBJ	PFV	NEG2
realis, irrealis, perfect	perfect, prospective, durative, negation, conditional/ 'may'	auxiliary, reflexive, direct possessive suffix, quantifier				second part of negation

postverbal domain we find the perfective particle and the second part of the discontinuous negation. The verb can optionally have a cliticized object pronoun.

Just as shown for Daakie and other Oceanic languages in Section 2.2, Nafsan too has different forms for independent pronouns and for the portmanteau subject markers. Table 2.8 shows the forms of independent and oblique pronouns, which differ from the portmanteau subject markers in Table 2.9. As we can see, the forms of independent and oblique pronouns do not bear any similarity to the subject markers. The subject markers are clitics in Nafsan and for that reason they are referred to as *subject proclitics*. Thieberger (2006) divides the subject proclitics in three paradigms: realis, irrealis, and perfect, see Table 2.9. The TMA markers (from the slot 2 in Table 2.7) attach to the subject proclitics and according to Thieberger (2006:155), they can combine with only one of the three paradigms of subject proclitics. The TMA markers and their choices of subject proclitics are listed in Table 2.10.

Table 2.8: Independent and oblique pronouns in Nafsan by Thieberger (2006:104)

	Independent pronoun	Oblique (indirect possession/benefactive)
1SG	*kineu/neu*	*(nig)neu*
2SG	*ag*	*(ne)gaag*
3SG	*ga*	*(ne)ga*
1PL.INCL	*akit*	*(ne)gakit*
1PL.EXCL	*komam*	*(nig)mam*
2PL	*akam*	*(ne)gamus*
3PL	*gar*	*(ne)gar*

Table 2.9: Subject proclitics in Nafsan by Thieberger (2006:150)

	Realis	Irrealis	Perfect
1SG	*a=*	*ka=*	*kai=*
2SG	*ku=*	*p̃a=*	*kui=*
3SG	*i=*	*ke=*	*ki=*
1DU.INCL	*ta=*	*tak=*	*takai=*
1DU.EXCL	*ra=*	*rak=*	*rakai=*
2DU	*ra=*	*rak=*	*rakai=*
3DU	*ra=*	*rak=*	*rakai=, rai=*
1PL.INCL	*tu=*	*tuk=*	*tu=, tui=, tukoi=*
1PL.EXCL	*u=*	*ko=*	*ui=, koi=*
2PL	*u=*	*ko=*	*koi=*
3PL	*ru=*	*ruk=*	*rui=, rukui=*

Table 2.10: Subject proclitics and their combinations with TMA markers in Nafsan by Thieberger (2006:155)

Subject proclitic	TMA marker
realis	prospective realis *po*
irrealis	prospective irrealis *fo*
realis, irrealis	durative *ta*
realis	conditional *f/fla*
perfect	perfect *pe*

The subject proclitics have a wide range of meanings even when occurring without TMA markers. Thieberger (2006:161) analyzes realis as referring to realized events with the past (28) or present reference (29) and irrealis as referring to unrealized events, such as future (30), imperatives (31) and possibilities, especially in complement clauses with desiderative or purposive meaning (Thieberger, 2006:304), as in (32). Thieberger (2006:167) notes that realis is used in a wider range of time frames than irrealis. The semantics of realis and irrealis in Nafsan is discussed in detail in Chapter 8.

(28) *Nanom p̃og, **u**=mai praktis.*
yesterday night 1PL.EXCL.REAL=come practice
'Yesterday evening we came to practice.' (Thieberger, 2006:151)

(29) *Mes **i**=pi nalelewen neu kin **i**=tefla.*
today 3SG.REAL=be opinion 1SG.POSS REL 3SG.REAL=thus
'Today it is my opinion that it is like this.' (Thieberger, 2006:167)

(30) *Komam* ***rak=****tap* *fam* *mau* *me* ***rak=****to.*
1PL.EXCL 1DU.IRR=NEG eat.IRR NEG2 but 1DU.IRR=stay
'We won't eat, but we'll stay.' (Thieberger, 2006:164)

(31) ***P̃a=fa=n*** *preg.pta-ki* *pano.*
2SG.IRR=go.IRR=DST make.ready-TR panel
'You go and prepare the panel.' (Thieberger, 2006:164)

(32) *Kineu* ***a=****mur* *na* ***ka=****traus* *tete* *natrauswen ses.*
1SG 1SG.REAL=want COMP 1SG.IRR=tell some story small
'I want to tell some short stories.' (Thieberger, 2006:310)

Similarly to many languages of Central Vanuatu, the realis/irrealis distinction in Nafsan can also be expressed by a stem-initial mutation of the verb, as discussed in Section 2.2 in the context of Oceanic languages. Irrealis is expressed by the stem-initial mutation of verbs with an initial *p-* which changes to *f-*, when preceded by an irrealis proclitic (Thieberger, 2006:162). In (31) the verb *pan* changes to *fan* in the irrealis. This stem mutation also distinguishes the prospective realis *po* and prospective irrealis *fo* markers. The stem mutation is not strictly limited to occurring with irrealis proclitics. Thieberger (2006, 2012) finds the stem mutation with realis and perfect proclitics in intransitive clauses, as in (33). Thieberger (2012) shows that this only happens in intrasitive clauses, as the transitive clauses require the realis *p-* form, as in (34). He explains this by semantically relating the irrealis mood to the expression of intransitivity, as suggested by Hopper & Traugott (2003).

(33) ***Kai=pe faam*** *su.*
1SG.PRF eat.IRR PFV
'I have finished eating.' (Thieberger, 2012:396)

(34) ***Kai=pe paam*** *magko.*
1SG.PRF eat.REAL mango
'I have eaten the mango.' (Thieberger, 2012:396)

Thieberger (2006) analyzes the category of perfect as being marked by the perfect subject proclitics and the perfect marker *pe* (see Table 2.10). According to Thieberger (2006), *pe* can only combine with the perfect proclitics and its semantics is not distinguished from them. Perfect marks events that have been completed (35) or ongoing states that have been achieved (36), but it can also be used with a future reference marking the anteriority of one future event in relation to another (37) (Thieberger, 2006). Interestingly, *pe* cannot combine with the irrealis proclitics, even when the future reference is denoted, as in (37). The semantics of perfect in Nafsan is discussed in detail in Chapter 5.

(35) *Me apap me iak* ***rai=pe*** *mat.*
and father and mother 3DU.PRF=PRF die
'And their father and mother were dead.' (Thieberger, 2006:168)

(36) *Me famle neu* ***rui=pe*** *tar taos ag. Ga i=mer ta slat*
but family:BI 1SG.POSS 3PL.PRF=PRF white like 2SG 3SG 3SG.REAL=in.turn NEG1 take
nask-o-k mau, ***rui=pe*** *tar∼tar.*
skin-V-1SG.DP NEG2 3PL.PRF=PRF white∼white
'But my family are white like you. He didn't get my skin, they are really white.' (Thieberger, 2006:168)

(37) *malnen p̃a=ler mai me* ***kai=pe*** *mtir leta su*
as 2SG.IRR=return come and 1SG.PRF=PRF write letter PFV
[Talking to someone who is leaving in a while] 'When you return, I will have written this letter.' (Thieberger 2012:392, based on Dahl 1985:TMAQ 107)[11]

The prospective markers *po* and *fo* attach to realis and irrealis subject proclitics, respectively. The realis prospective marker *po* is used for realized events that are in the future in relation to the time frame of the event the utterance is about (Thieberger, 2006:168). The prospective realis *po* also appears as a sequential marker, and it is not uncommon in clause chaining, where it is not necessarily preceded by a subject proclitic (Thieberger, 2006:168). Example (38) shows an event marked by *po* as posterior to the event of "being in class six", and example (39) shows *po* marking the last event in the sequence. The marker *po* is discussed in more detail in Section 5.3.1.

(38) *Go ntau katol nen a=to klas siks, go* ***a=po*** *pas examination.*
and year third that 3SG.REAL=stay class six and 1SG.REAL=PSP.REAL pass examination:BI
'And the third year that I was in class six I was to pass the examination.' (Thieberger, 2006:169)

(39) *Apu gar i=pakor Epag, i=to Epag,* ***ø=po*** *pak Efil.*
grandfather 3PL.POSS 3SG.REAL=born Pango 3SG.REAL=stay Pango ø=PSP.REAL go.to Vila
'Their grandfather was born at Pango, he stayed at Pango then went to Vila.' (Thieberger, 2006:327)

The prospective irrealis *fo* refers to possible future events and hypothetical situations (Thieberger, 2006:169), as we can see in (40).

(40) *me i=piatlak natam̃ol nen kin* ***ke=fo*** *mer gaag preg naul nkas nen*
but 3SG.REAL=have person that REL 3SG.IRR=PSP.IRR again 2SG.BEN make leaf tree that
ke=tu-o-k p̃a=min-gi-ø
3SG.IRR=give-TS-2SG.OBJ 2SG.IRR=drink-TS-3SG.OBJ
'But there are people who will then give you leaf medicine to drink.' (Thieberger, 2006:169)

The markers *f* and *fla* are glossed by Thieberger (2006) as a conditional and a 'may' particle, respectively. While *f* typically introduces the protasis (=subordinate clause) of a conditional construction (41),[12] *fla* can appear both in conditional apodoses and protases (Thieberger, 2006:250), as in (41) and (42), respectively. According to Thieberger (2006:250), *f* and *fla* combine only with the realis subject

[11] TMAQ followed by a number indicates the question number in Dahl's (1985) questionnaire.

[12] The protases, i.e. the antecedents (typically subordinate clauses), of conditional clauses are indicated by square brackets.

proclitic.

(41) *[**A=f** mer pa] me **a=fla** lakor wel Jimmy Stevens.*
1SG.REAL=COND in.turn go but 1SG.REAL=may maybe like Jimmy Stevens
'If I went, I would be like Jimmy Stevens.' (041.014, Thieberger (2006:251))

(42) *[Ko ga **i=fla** mur-i-n na ke=tau tete nanromien ses],*
or 3SG 3SG.REAL=COND want-TS-3SG.OBJ COMP 3SG.IRR=leave some present small
***i**=kano trau leg mai tau.*
3SG.REAL=unable just straight hither leave
'Or if he wanted to leave a small present he couldn't just come and leave it.' (Thieberger, 2006:320)

Thieberger (2006:319) also identifies *i=f-wel* as a conditional-introducing expression. *I=f-wel (kin)* is glossed as 3SG.REAL=COND-like (COMP) and it can be literally translated as 'if it is like (that)'. In (43) the protasis is introduced by the expression *i=f-wel*, and the verb is also marked by *f* attached to a subject proclitic. The apodosis, i.e. the main clause, is frequently marked by the irrealis proclitic and the prospective irrealis *fo*, as in (43).

(43) *[**i=f-wel** **ku=f** tae trok-wes] go **ka=fo***
3SG.REAL=COND-like 2SG.REAL=COND know agree-3SG.OBL and 1SG.IRR=PSP.IRR
plak-e-ø ler
with-TR-3SG.OBJ return
'If you agree to it, then I will take him back.' (103.023)

Another TMA marker from slot 2 (cf. Table 2.7) is the durative marker *ta* which is used for "an activity that keeps on going" (Thieberger, 2006:170, 248) and can be glossed as 'still' (Thieberger, 2006:248).[13] This marker occurs with realis and irrealis subject proclitics (my observation), as in (44) and (45), respectively.

(44) *i=**ta** sees i=lakor piatlak ntau a=ta tae mau.*
3SG.REAL=still small 3SG.REAL=maybe have year 1SG.REAL=NEG1 know NEG2
'He is still small, he is around I don't know how old.' (015.018)

(45) *U=tl-i-ø i=wi tuk=**ta** tao kafman ke=**ta***
1PL.REAL=tell-TS-3SG.OBJ 3SG.REAL=good 1PL.INCL.IRR=DUR leave government 3SG.IRR=DUR
*nranru rak=**ta** tu-kit ntaewen ke=**ta** lakor pa.*
two 3DU.IRR=DUR give-1PL knowledge 3SG.IRR=DUR maybe go
'We said it is good (that) we still leave the two governments to keep giving us education, that it might still go on.' (Thieberger, 2006:249)

Thieberger (2006:250) notes that the durative marker should be distinguished from the first particle of negation *ta(p)*. Negation is formed by the discontinuous double negation forms *ta(p)...mau* and it

[13] This type of grammatical marking of the meaning of 'still' is also called "persistive" in African linguistics (see Nurse & Philippson, 2007).

Table 2.11: The auxiliary verbs and their slots in Nafsan (Thieberger, 2006:253)

AUX_1	AUX_2	AUX_3	AUX_4
mer 'again'	*kano* 'cannot'[15]	*ler* 'return'	*mai* 'come'
	lakor 'maybe'		*pan* 'go'
	mal 'not want to'		
	mas 'must'		
	nrus 'just'		
	pei 'first'		
	traem 'try'		
	tae 'know, be able to'		
	to PROG/HAB		

can co-occur with the durative *ta*, as in (46).[14] In combination with negation and negative verbs, the durative marker is typically interpreted as 'not yet', as in (46) and (47).

(46) *Nasum̃ ru=**ta** **ta** p̃elgat-i-ø mau.*
house 3PL.REAL=DUR NEG1 open-TS-3SG.OBJ NEG2
'The house, they haven't opened it yet.' (Thieberger, 2006:250)

(47) *Ki=pe pitlak asel ga me i=**ta** **tik-ki** tesa.*
3SG.PRF=PRF have friend 3SG.POSS but 3SG.REAL=DUR not.have-TR child
'He has got his girlfriend, but he doesn't have any children yet.' (Thieberger, 2006:250)

Moving to the slot 3 from Table 2.7, we can identify auxiliary verbs as elements with TMA meanings. Each auxiliary verb belongs to a specific morphosyntactic slot, whose ordering is shown in Table 2.11. Auxiliaries can express a range of different meanings, which can be considered to be more or less grammaticalized. For the sake of brevity, I focus here on Thieberger's (2006) description of two auxiliaries that are mentioned in other chapters in this thesis: *mer* 'again' and *to* PROG/HAB.

Thieberger (2006:254) glosses *mer* as 'again', 'in turn', and 'too'. Although the meaning of 'again' seems to be the prevalent one (48), in (49) there is no suggestion that the addressee used to be married before, which means *mer* should be translated as 'in turn' in this case (Thieberger, 2006:255). The meaning of *mer* in conditional clauses is addressed in Section 8.5.

(48) *I=**mer** ga preg timen i=lim.*
3SG.REAL=again 3SG.BEN make arrow 3SG.REAL=five
'He again got five arrows for him.' (Thieberger, 2006:254)

(49) *A=mro-ki-n nag akam u=f **mer** taulu tete.*
1SG.REAL=think-TR-3SG.OBJ say 2PL 2PL.REAL=COND in.turn marry some
'I think that you should now marry someone.' (Thieberger, 2006:255)

[14] As we have seen in Table 2.7, Thieberger (2006) analyzes the durative marker and negation as occurring in the same slot, but he also notes that negation can be in the auxiliary slot (Thieberger, 2006:246). This is discussed in Section 2.3.2.

[15] Thieberger (2017) proposed that *kano* might be a borrowing from English, introduced by Scottish missionaries.

Thieberger (2006:259) classifies *to* as a habitual marker (50) when used as an auxiliary verb (see also von Prince et al., 2019e), and as a main verb it means 'to be in the state of'. He also glosses it as a progressive (51) and a stative marker (52). This marker has a similar distribution to the Bislama *stap* 'stay'.

(50) *Gar nen ru=**to** lekor nmatu e-sum̃.*
3PL REL 3PL.REAL=HAB watch.over woman LOC-house
'They look after women at home.' (Thieberger, 2006:260)

(51) *Kaltog i=to erfale nen a=**to** til-i-ø*
Kaltog 3SG.REAL=stay cave that 1SG.REAL=PROG say-TS-3SG.OBJ
'Kaltog was in this cave that I am talking about.' (Thieberger, 2006:346)

(52) *Me tkanwan kin ag ku=**to** maet kuk pog tefla?*
but thus COMP 2SG 2SG.REAL=STAT fright cook day like
'But why are you scared to cook in the daytime like this?' (Thieberger, 2006:98)

The only postverbal TMA marker is the perfective *su* which encodes a completed action (Thieberger, 2006:265), as in (53) and (54). This marker has a similar distribution to the Bislama *finis* 'finish'. The marker *su* is analyzed in Section 5.3.1.

(53) *Kineu a=pam natam̃ol i=tol **su**.*
1SG 1SG.REAL=eat man 3SG.REAL=three PFV
'I have eaten three men.' (Thieberger, 2006:265)

(54) *Komam u=skul pan u=skul **su***
1PL.EXCL 1PL.EXCL.REAL=school go 1PL.EXCL.REAL=school PFV
'We schooled until we finished school.' (Thieberger, 2006:265)

2.3.2 Notes on reanalyzed categories in Nafsan

Since parts of my reanalysis of TMA categories in Nafsan in comparison to Thieberger's (2006) analysis cannot be presented in an ideal order for the reader, this section offers a brief overview of all the reanalyzed categories in relation to the features presented in Section 2.3.1. Most of the points made here are related to morphosyntax and terminology. The semantic analyses are presented in the relevant chapters which are referenced here.

The first point of reanalysis is the position of the first element of negation in the verbal complex. In Table 2.7 in Section 2.3.1, the negation was placed in the same slot as the other TMA markers (slot 2), according to Thieberger (2006). Thieberger (2006:246) also notes that negation can occur after the auxiliary *mer*. However, judging from the corpus data (Thieberger, 1995–2018) I can conclude that *ta* NEG1 should always follow both the AUX_1 and AUX_2 slots from Table 2.11 in Section 2.3.1.[16] Example (55) shows the co-occurrence of the TMA marker *fo*, the auxiliary *mer* from the AUX_1 slot, and the negation *ta*. In (56), the negation *ta* follows the auxiliary *lakor* of the AUX_2 slot. Since in

[16] I adopt the economic approach that *ta* is always in the same position, regardless of whether AUX_1 and AUX_2 are filled or not.

Table 2.12: Exemplified verbal complex in Nafsan

SBJ=	TMA	AUX$_1$	AUX$_2$	NEG1	BEN	V	PFV	NEG2
ruk= (3PL.IRR)	*fo* (PSP.IRR)	*mer* ('again')	*lakor* ('maybe')	*ta(p)*	*ga* (3SG)		*su*	*mau*

both cases *ta* follows an auxiliary verb, we need to conclude that *ta* is positioned after the AUX$_2$ slot, as illustrated in Table 2.12.[17] In Thieberger's (1995–2018) corpus I did not attest any co-occurrences of *ta* preceding the AUX$_1$ and AUX$_2$ slots. In Table 2.12 each slot is exemplified with an element that belongs to it. In the corpus data I did not find any co-occurrences of *ta* and the AUX$_3$ and AUX$_4$ slots.

(55) *a=ta mro kin na ruk=**fo** **mer** **ta** puet kineu **mau**.*
1SG.REAL=still think COMP COMP 3PL.IRR=PSP.IRR again NEG1 pull 1SG NEG2
'I still think that they will not pull me again.' (130.096)

(56) *ku=**lakor** **ta** tae san kin a=to til-i-ø **mau** ko ku=tae?*
2SG.REAL=maybe NEG1 know there COMP 1SG.REAL=PROG say-TS-3SG.OBJ NEG2 or 2SG=know
'Do you not know there what I said, or do you?' (097.062)

The relabeling of subject proclitics is a result of my analysis in Sections 5.1.1 and 8.3. There are two relevant differences in comparison to Thieberger (2006). The first one is reanalyzing the realis paradigm of subject proclitics as being underspecified for TMA meanings and marking only the person and number of the subject. For this reason, I call this paradigm the "general" subject proclitics. I gloss them only as person and number, without the gloss REAL used in previous sections. The second difference is the reanalysis of the perfect paradigm as "perfect-agreeing". As I argue in Section 5.1.1, the subject proclitics of this paradigm do not encode the perfect aspect on their own and in my fieldwork data they rarely occur without the perfect marker *pe*. Since they are still the most common choice of subject proclitics with the perfect *pe* I call them "perfect-agreeing". In order to avoid ambiguity with general proclitics, I continue glossing them as PRF. Another additional discovery is the existence of the 1DU.INCL form *tai*= in the perfect-agreeing paradigm. The three paradigms are outlined in Table 2.13 with the reanalyzed items in bold.

The restrictions imposed by the subject proclitics on TMA markers were also revisited in light of my fieldwork. Table 2.14 lists all the TMA markers with their functions and the proclitics they combine with. The reanalysis concerning the perfect-agreeing proclitics and *pe* and the discovery of a new immediate-future morpheme *fe* is discussed in 5.1.1. All the other markers combining with the general and irrealis proclitics are discussed in Chapter 8.

[17] Note that this differs from my previous analysis in Krajinović (2018), where I proposed *ta* is positioned between the TMA and AUX slots.

Table 2.13: Reanalyzed subject proclitics in Nafsan (reanalyzed items in bold)

	General	Irrealis	**Perfect-agreeing**
1SG	*a=*	*ka=*	*kai=*
2SG	*ku=*	*p̃a=*	*kui=*
3SG	*i=*	*ke=*	*ki=*
1DU.INCL	*ta=*	*tak=*	*takai=*, ***tai=***
1DU.EXCL	*ra=*	*rak=*	*rakai=*
2DU	*ra=*	*rak=*	*rakai=*
3DU	*ra=*	*rak=*	*rakai=*, *rai=*
1PL.INCL	*tu=*	*tuk=*	*tui=*, *tukoi=*
1PL.EXCL	*u=*	*ko=*	*ui=*, *koi=*
2PL	*u=*	*ko=*	*koi=*
3PL	*ru=*	*ruk=*	*rui=*, *rukui=*

Table 2.14: Subject proclitics and TMA markers in Nafsan with new labels (reanalyzed items in bold)

Subject proclitic	TMA marker
general	prospective realis *po*
irrealis	prospective irrealis *fo*
irrealis	**immediate future *fe***
general, irrealis	*ta* 'still'
general, irrealis	conditional *f*
general, irrealis	**potential** *fla*
perfect-agreeing, general	perfect *pe*

There is one important discovery regarding the auxiliary *mer* 'again', which I found to mark counterfactuality in conditional clauses without any indication of the 'again' meaning (Krajinović, 2018), as in (57). Although it is optionally used in counterfactual conditional clauses, it is restricted to counterfactual contexts and it cannot be used in hypothetical conditionals like (58). This counterfactual function of *mer* is analyzed in more detail in Section 8.5.

(57) *P̃a=f* ***mer*** *pei taulu Adam rak=fo pitlak mane laap.*
2SG.IRR=COND CF first marry Adam 2DU.IRR=PSP.IRR have money:BI a.lot
'If you had married Adam, you two would have had a lot of money." (AK1-030-01, 00:03:02.556-00:03:05.695)

(58) *I=f-wel kin p̃a=(*****mer****)taulu John, akam rak=fo pitlak teesa laap.*
3SG.REAL=COND-like COMP 2SG.IRR=(*CF)marry John 2DU 2DU=PSP.IRR have child many
'If you get married to John, you two will have a lot of children.' (AK-010, 00:05:58.038-00:06:02.385)

Chapter 3

Methodology

In this study, I employed a number of methods, including corpus work and elicitation techniques, such as questionnaires and storyboards, used in my fieldwork. After laying out the background of semantic fieldwork and the MelaTAMP project in Sections 3.1 and 3.2, respectively, I discuss these methods in more detail in Section 3.3. In Section 3.4 I explain the nature of the typological perspective of this thesis.

3.1 Methodology in semantic fieldwork

There has been increased attention paid to methodologies used in semantic fieldwork in recent years (e.g. Matthewson, 2004; Majid, 2012; Bochnak & Matthewson, 2015; Matthewson et al., 2017; Lahaussois & Vuillermet, 2019). There are also many studies focusing explicitly on eliciting and analyzing TMA categories in a fieldwork setting, such as Cover (2015), Cover & Tonhauser (2015), Bar-el (2015), Bohnemeyer (in press), and Matthewson et al. (2017).

In linguistic fieldwork, the collection of naturalistic texts, including narratives, dialogs, and procedural texts, is one of the central methods for building a language corpus. In the context of underdocumented and underdescribed languages, the corpus plays an essential role in preserving a large body of language materials that can be used for future research. In order to understand the general distribution of any grammatical morpheme, the linguist needs to study naturalistic texts represented in the corpus. However, the study of texts is not in itself sufficient (Matthewson, 2004; Cover, 2015), because a) the corpus may be lacking certain contexts where the morpheme would otherwise occur, and b) semanticists are not only interested in contexts where a certain morpheme *can* occur, but also in contexts in which it *cannot* occur. The problem a) can be addressed by using different kinds of experiments or stimuli. This will be addressed below in a wider discussion about questionnaires and storyboards. Regarding problem b), the only way to obtain negative evidence is through elicitation. Although the elicitation of speaker's judgments has been criticized by some linguists (Schütze, 1996; Mithun, 2001), I follow Matthewson (2004) in considering that it is the job of the linguist to understand why a specific sentence was accepted or rejected, and to question possible influences of different variables during the elicitation. One way of understanding the variables that

influence speakers' responses in elicitation is to identify different types of judgments. Matthewson (2004) proposes three types of speaker's judgments linguists need to look for: grammaticality judgments (dependent on the grammatical structure), truth value judgments (true or false in a given situation), and felicity judgments (dependent on the context). The linguist needs to be able to identify if the judgment given by the speaker matches the one she was looking for by asking questions and understanding the context of the interaction (see Matthewson, 2004).

One of the best semantic tools for making sure the speaker reaches the meaning the linguist intends to capture is to provide a rich discourse context in which that meaning occurs (Matthewson, 2004). The understanding that providing a context is an essential tool in any kind of semantically oriented elicitation led to the creation of different kinds of questionnaires, tests, and stimuli in both formal semantics and typology. I focus first on translation-based questionnaires and semantic tests and then I discuss the use of stimuli in TMA semantics. Dahl (1985, 2000a) provides various questionnaires targeting specific contexts in which a given TMA category would be expected. For example, in (1) and (2) Dahl (2000c) is aiming at the contrast between the experiential function of the perfect (1) and a general past tense indicated by the past temporal adverbial (2). In this questionnaire the context and the targeted sentence are presented in English, with the targeted verb in an uninflected form written in capital letters. Leaving the verb form uninflected aims at reducing possible influences from English on the targeted language. The same method has been adopted in the Iamitive Questionnaire by Olsson (2013) and in the Nondum questionnaire by Veselinova (2018) (see Appendix B with Nafsan data).

(1) Question: You MEET my sister (at any time in your life up to now)? (Dahl, 2000c:801, PQ 4)[1]

(2) [It is morning. A wakes up, looks out of the window and sees that the courtyard (or the street) is wet.]
A: It RAIN during the night. (Dahl, 2000c:801, PQ 14)

In the formal semantics literature, similar tests with context manipulation have been used to capture minimal pairs of meaning. In (3) and (4), Koontz-Garboden (2007:133) is aiming at capturing the difference between a neutral stative meaning (3) and the meaning of change of state (4).

(3) Context: Sione randomly walks into a room and sees that there are dry clothes on the ground. He has no knowledge about the state of their dryness prior to walking into the room.
Answer: The clothes are dry. (Koontz-Garboden, 2007:133)

(4) Context: Sione has done the laundry and has a bunch of wet clothes. He hangs them out on the line to dry while they are still wet. He leaves to go do something else and returns after some period of time, finding that they have dried in the interim.
Answer: The clothes dried. (Koontz-Garboden, 2007:133)

As we can see from the examples above, the only difference between the Dahl (1985, 2000c,b) ques-

[1] I use PQ to refer to the Perfect Questionnaire, followed by the number of the example.

tionnaires and Koontz-Garboden's (2007) test is that Koontz-Garboden (2007) is aiming at more fine-grained meanings which are distinguished in his subject language, while Dahl (1985, 2000c,b) questionnaires aim at discovering more basic functions of a given category that can then be related to cross-linguistic TMA categories. In any case, both of these approaches rely on the translation from the meta-language, and on an established concept or meaning they are testing. In Section 5.2.1, I show that this can be problematic, as a given structure might appear to "fail" a semantic test, when in fact it is due to the properties of that particular language that the test does not work the way we might expect.

In order to diminish the influence of translation as much as possible and create naturalistic utterances, Burton & Matthewson (2015) and Matthewson et al. (2017) advocate for the usage of storyboards in semantic fieldwork. Storyboards are picture-based stories which contain targeted semantic contexts and are told to the consultant in a meta-language, which is followed by the speaker's telling of the story by looking at the pictures and without any other linguistic stimuli. Although there are different kinds of stimuli used by linguists (video, Pear Story, games etc.), the storyboards are probably one of the only types of stimuli where very controlled semantic contexts can be obtained and be directly compared with other speakers. The storyboard methodology as used in this work is addressed in more detail in Sections 3.2 and 3.3.

3.2 The MelaTAMP project

Since this thesis is being developed within the framework of a broader project, in this section I describe the workflow and the methods of the project which were used in this thesis.

This thesis was written within the MelaTAMP project: 'A corpus-based contrastive study of tense, aspect, modality and polarity (TAMP) in Austronesian languages of Melanesia (MelaTAMP)'. The MelaTAMP project is led by Kilu von Prince and Manfred Krifka and funded by the German Research Foundation or *Deutsche Forschungsgemeinschaft*, at *Humboldt-Universität zu Berlin*. The MelaTAMP project studies TMA expressions in seven Oceanic languages of Melanesia, which are listed below together with the reference to their corpora.

- Saliba/Logea [sbe] (Margetts et al., 2017)
- Maŕvea [mkv] (Guérin, 2006)
- Daakie [ptv] (Krifka, 2018b)
- Daakaka [bpa] (von Prince, 2013)
- Dalkalaen[2] (von Prince, 2018g)
- North Ambrym [mmg] (Franjieh, 2018)

[2]Dalkalaen does not have the ISO 639-3 code at the time of the writing. Although Dalkalaen is closely related to Daakaka, as von Prince (2015:4) puts it, "Dalkalaen and Daakaka sound quite different when spoken—mostly because of significant differences between sound systems and because some very frequent words are not cognates".

- Nafsan [erk] (Thieberger, 1995–2018)

The starting point of the project was the work on the above-mentioned corpora through which we identified the distributions of different morphemes with TMA meanings. Druskat (2018) imported the corpora into ANNIS[3] (Krause & Zeldes, 2016), a corpus platform where the corpus data can be optimally searched and visualized. The following steps included choosing TMA contexts where the project languages showed the most interesting features and the contexts which were underrepresented in the corpora. For the latter, we created storyboards that included those contexts. Some storyboards were created by Kilu von Prince and others were adopted from Totem Field Storyboards[4], for a full list see titles in bold in Tables 3.2 and 3.3 in Section 3.3. These storyboards were elicited in the field in 2017 in Nafsan (by myself), Maʷ̌ea (by Valérie Guérin), Daakie (by Manfred Krifka), Daakaka (by Kilu von Prince), Dalkalaen (by Kilu von Prince), and North Ambrym (by Mike Franjieh). All the storyboards were transcribed and imported into the ANNIS platform.

In Section 3.3 I explain in detail the methods I used in my work on Nafsan. The methods that are directly related to the MelaTAMP project are the use of the Nafsan corpus (Thieberger, 1995–2018) and the storyboards. I used all the MelaTAMP storyboards that were also elicited in the other project languages and some additional storyboards in the two field trips in 2017 and 2018 (see Table 3.4 in Section 3.3). The most important contribution of the MelaTAMP data to this work lies in the possibility to compare the Nafsan data to project languages in two ways: a) through corpus work, and b) through comparing parallel texts obtained through storyboards. Both of these methods are employed in this work whenever MelaTAMP languages exhibit properties relevant for the discussion at hand. Additionally, Nafsan is also compared to some languages which are not a part of the MelaTAMP project and in these cases the relevant data is taken from reference grammars, other published materials, and corpora if possible. The choice of these languages is based on the existence of categories of the realis/irrealis mood and the perfect aspect in their grammars.

3.3 Corpus work and elicitation techniques used on Nafsan

In this section I describe the methods and the methodological steps I took in my research on Nafsan. My work involved three main methodological steps: corpus work, data collection, and data analysis.

I started working on Nafsan by analyzing occurrences of different TMA markers and subject proclitics in the corpus (Thieberger, 1995–2018) and comparing them to their descriptions in the grammar of Nafsan (Thieberger, 2006). This process allowed me to form new and more specific hypotheses about its TMA categories than available in the reference grammar and to determine the type of linguistic evidence needed to confirm or disprove them. For the case of the perfect category this process is described in more detail in Section 5.1. Prior to my data collection, I chose several questionnaires and storyboards that could address my hypotheses. The questionnaires I elicited in the field are listed in Table 3.1 and storyboards in Tables 3.2, 3.3, and 3.4. All the results from the questionnaires

[3] Available at `https://korpling.org/annis3/`.
[4] Available at `http://totemfieldstoryboards.org`.

Table 3.1: Elicited questionnaires

Name of the questionnaire	Targeted categories	Source/reference
The Future Questionnaire (Appendix B.4)	absolute/relative/immediate future, irrealis	Dahl (2000b:FQ)
The Perfect Questionnaire (Appendix B.1)	perfect	Dahl (2000c:PQ)
The Iamitive Questionnaire (Appendix B.2)	iamitive	Olsson (2013:IQ)
The *Nondum* Questionnaire (Appendix B.3)	*nondum* 'not yet'	Veselinova (2018:NQ)

in Nafsan, as well as the elicited meta-linguistic judgments, are attached in Appendix B. All the storyboards are easily accessible through online sources and PARADISEC, as explained below. The text file with the current version of the transcribed Nafsan data elicited through storyboards is available at `https://anakrajinovic.com/wp-content/uploads/2019/11/storyboard_corpus.txt`.[5] I now turn to explaining in detail how each of these methods was implemented in the field.

I had two field trips that lasted for two months each, first in 2017 and second in 2018. All the collected recordings and their transcriptions are archived in PARADISEC in the collection Krajinović (2017b). Every example in this thesis contains the reference to the sound file name, and whenever possible the time stamp. In my first field trip I conducted the Future and the Perfect Questionnaire from Dahl (2000a) and in my second field trip, I used the Iamitive (Olsson, 2013) and the *Nondum* questionnaires (Veselinova, 2018). I chose Dahl's (2000a) questionnaires because they targeted categories and meanings which are relevant in Nafsan – future reference expressed by irrealis in Nafsan and perfect aspect, see Table 3.1. Through the Perfect Questionnaire it also became clear that the Nafsan perfect might be related to iamitives (Olsson, 2013) and *nondums* (Veselinova, 2018). Moreover, I needed to choose questionnaires which focus on specific categories in more detail, since the general TMA questionnaire from Dahl (1985) was already elicited by Thieberger (2006). In this particular case, the advantage of Dahl's (2000a) questionnaires in comparison to more fine-grained questionnaires used in formal semantics (cf. (3) and (4) in Section 3.1) is that they aim at being comprehensive and cross-linguistically applicable, and do not require precise hypotheses based on good knowledge of the language. Although I had initial hypotheses about different TMA structures in Nafsan, these hypotheses were quite general and not sufficiently precise for building my own questionnaire based on fine-grained semantic meanings. I elicited the questionnaires from one or two speakers, depending on the session, both male and between 27 and 29 years old. The questionnaires were completed by presenting the speaker with a sentence in English, with the targeted verb in an uninflected form written in capital letters. The sentence is then translated into Nafsan, with the appropriate marking on the verb. The completion of the questionnaire was a slow process, which was partially accelerated

[5]This file was created by extracting only the speaker tiers from ELAN files. Full transcriptions with translations, some of which might not be entirely translated, are archived in Krajinović (2017b).

by giving the questionnaire to the speaker prior to the recording session. In this way some of the examples would already be written down and we could discuss the alternative ways of saying the examples during the recording. Naturally, this type of elicitation is prone to translation effects and it can only be done with speakers who speak English. However, the crucial benefit of this process was the elicitation of felicity judgments. This implies discussing with the speaker about how different contexts from the questionnaire can be manipulated so that a given category becomes acceptable in that new context. One example of this is the unacceptability of perfect in sequences. Examples like (5) from the Dahl's (2000c) Perfect Questionnaire aim at testing whether the grammatical element at hand can felicitously be used in sequences of events (see also Lindstedt, 2000). Since perfect denotes the posttime of an event that holds at the utterance time in the case of the present perfect or reference time in the case of the past perfect (see also Chapter 4), it cannot be used in sequences of events, which follow each other in a linear order. For (5) in Nafsan, the speaker who answered the questionnaire judged the usage of the general subject proclitic as the only grammatical marking of verbs in sequences. Upon my questions about the possibility of using the perfect for every event in the sequence, the speaker provided a different context where perfect would be felicitous (6). This is a list reading in which every clause is taken to fall within a different context or a time frame, and is not considered to form a temporal sequence of events. In other words, we are dealing with two different text types – (5) is an example of narration and (6) is a list.[6] The list reading is also compatible with the English perfect (Iatridou et al., 2003:146).

(5) Context: Do you know what happened to me yesterday? Target: I WALK in the forest. Suddenly I STEP on a snake. It BITE me in the leg. I TAKE a stone and THROW (it) at the snake. It DIE.

A=to *siwer namlas me* ***a=****kam-ø* *m̃at* *i=skei.* ***A=****kam-ti* *go*
1SG=PROG walk forest but 1SG=step-3SG.OBJ snake 3SG=one 1SG=step-3SG.OBJ and
i=*trau* *kat natu-o-k.* ***A=****wes* *faat* *i=skei* *trau* *p̄kapun-i.*
3SG=really bite leg-V-1SG.POSS 1SG=take stone 3SG=one really kill-3SG.OBJ
'I was walking in the forest. Suddenly I stepped on a snake and it bit me in the leg. I took a stone and killed it.' (AK1-116-01, from Dahl (2000c:801, PQ 9))

[6] As noted by an anonymous reviewer, in (6) the particular world knowledge around this example results in an understanding that the described events happened in a particular order, otherwise the sentence would be incomprehensible. However, as is widely accepted in formal semantic literature (e.g. Iatridou et al., 2003), the list reading is different from a narrative sequence of events, because it does not encode how the events unfolded temporally and sequentially, it is rather a list of answers to a particular demand (or a check list), in this case "addressing boss's demands". So, in list readings the temporal order does not matter, except for the world knowledge in (6) that people first had a workshop and were paid later.

(6) Context: The boss orders X to call people, gather some words in Nafsan, and pay them. The employee reports on what she did addressing boss's demands one by one:

Kai=pe *sos-o-r* ***su,*** ***kai=pe*** *pestaf-i-r* ***su*** *ki* *nafsan,*
1SG.PRF=PRF call-TS-3PL.OBJ PFV 1SG.PRF=PRF talk-TS-3PL.OBJ PFV PREP language
rui=pe *tao* *nafsan faum* ***su,*** ***kai=pe*** *paktof-i-r.*
3PL.PRF=PRF give.me word new PFV 1SG.PRF=PRF pay-TS-3PL.OBJ

'I have called the people, I have talked to them, they have given me new words, and I have paid them [just like you asked].' (AK1-116-01)

As we can see, the context offering a list reading in (6) was provided by the speaker and was not a part of the questionnaire. This type of information is invaluable, especially when the linguist is not a native speaker of the language. If I had elicited only example (5) and had not insisted on asking whether perfect could be used in the same context, I could be left wondering whether the speaker could have used perfect and chose the general proclitic for other reasons, such as style. If the speaker had simply rejected the sentence with perfect, this would be a good indication the perfect is not felicitous in sequences, but there would still be a doubt about other possible variables that could restrict the appearance of this morpheme in sequences. In the end, providing an entirely different context in (6) is the final proof that the Nafsan perfect is not acceptable in sequences precisely for the reasons that make the category of perfect unacceptable in sequences. I adopted this type of approach in drawing conclusions from speaker's judgments whenever possible.

Unfortunately, the kind of work described above is only possible with one or two speakers at the time, who also have a good command of English and are interested in meta-linguistic discussions. Although this type of work was essential in creating successful hypotheses and analyses in my work, I also understood the limitations of relying on judgments of one speaker alone. In order to minimize individual biases, I conducted experimental elicitations based on storyboards across several speakers. The storyboards I used were designed in three distinct ways corresponding to their slightly different initial purposes. These are the following:

- MelaTAMP storyboards designed to address mostly modal meanings and to be used across all the languages studied in the MelaTAMP project, see Table 3.2. Additionally, the MelaTAMP project also used some Totem field storyboards (see below). All the storyboards elicited in the languages of the MelaTAMP project are printed in bold in Tables 3.2 and 3.3.

- Totem field storyboards (`http://totemfieldstoryboards.org`) designed to address different TMA meanings by researchers of the British Columbia University, see Table 3.3.

- Storyboards I designed to obtain new evidence for my hypotheses and analyses based on the elicitation of the Dahl's (2000a) questionnaires and previously elicited storyboards, see Table 3.4.

Table 3.2: MelaTAMP storyboards

List of used storyboards	Targeted categories	Num. of speakers
"Festival" (von Prince, 2018c)	modality (conditionals)	9
"Red yam" (von Prince, 2018e)	modality (conditionals)	8
"Fat pig" (von Prince, 2018b)	modality (relative clauses)	6
"Bundle of bananas" (von Prince, 2018a)	modality (complement clauses)	7
"Tomato and pumpkin" (von Prince, 2018f)	aspect (change of state)	6

Table 3.3: Totem field storyboards

List of used storyboards	Targeted categories	Num. of speakers
"The fortune teller" (TFS, 2010)	modality (conditionals)	6
"The woodchopper" (TFS, 2011d)	modality (conditionals)	6
"Tom and Mittens" (Rolka & Cable, 2014)	modality (epistemic)	6
"Bill vs. the weather" (Vander Klok, 2013)	modality (epistemic)	9
"Chore girl" (TFS, 2011a)	modality (deontic)	6
"Hawaii trip" (Underhill & Cable, 2015)	aspect (sequences, temp. adverbs)	3
"Chameleon story" (TFS, 2012a)	aspect (change of state)	2
"Sick girl" (TFS, 2011c)	modality (deontic)	2
"Feeding fluffy" (TFS, 2012b)	modality (epistemic)	2
"Miss Smith's bad day" (Matthewson, 2014)	aspect (perfect)	5
"On the lam" (TFS, 2011b)	modality (epistemic)	4

Table 3.4: Storyboards I designed to provide new evidence for my analyses

List of used storyboards	Targeted categories	Num. of speakers
"Garden" (Krajinović, 2018a)	modality (conditionals)	6
"Garden 2" (Krajinović, 2018a)	modality (conditionals)	5
"Making laplap" (Krajinović, 2018c)	aspect (perfect), modality/negation	6
"Making laplap 2" (Krajinović, 2018c)	modality/negation	5
"Haircuts" (Krajinović, 2018b)	aspect (perfect, change of state, duality)	5
"The fortune teller 2" based on TFS (2010)	negation	3

Tables 3.2, 3.3, and 3.4 list the targeted categories of each storyboard and the number of speakers who produced the storyboard. Besides the provided citations in these Tables, the versions of the storyboards I used in the field are also archived under items AK1-142 and AK1-166 in my PARADISEC

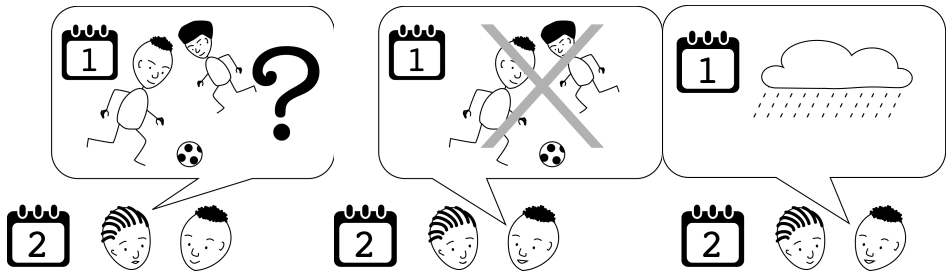

Figure 3.1: "Did you play soccer yesterday?" "No, I did not play, it rained.", from "Festival" by von Prince (2018c)

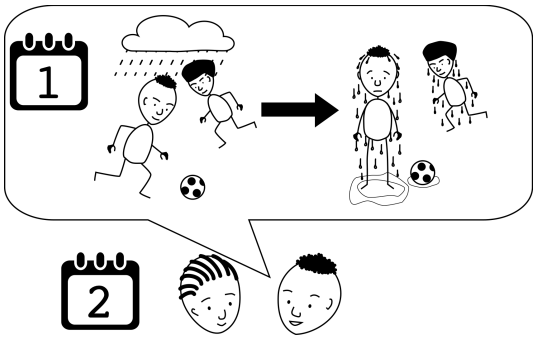

Figure 3.2: Targeted context: "If I had played soccer yesterday, I would have gotten wet.", from "Festival" by von Prince (2018c)

collection (Krajinović, 2017b). Following the storyboard methodology by Burton & Matthewson (2015), each storyboard contains specific targeted sentences which are embedded in the storyline that provides a carefully selected TMA context. This context enables the targeted semantic reading of the targeted sentence. A few frames from the storyboard "Festival" containing one targeted sentence are exemplified in Figures 3.1 and 3.2: the storyboard frames in Figure 3.1, where the event of playing soccer is negated, lead up to the targeted past counterfactual meaning in Figure 3.2. Figure 3.3 is an example of two frames from the storyboard "Making laplap". In this case, the process of grating of the taro in the first picture sets up the context in such a way that Mary's statement, as the targeted context, can only be interpreted as talking about the result of grating. This targeted sentence is expected to capture the resultative function of the perfect aspect. In my first field trip in Erakor in 2017, I elicited all the storyboards from Tables 3.2 and 3.3, except for "Miss Smith's bad day" and "On the lam", which were elicited in 2018 together with the storyboards from Table 3.4. I focus first on describing the process of elicitation in 2017 and then I describe the second field trip in 2018.

In 2017, the process of eliciting the storyboards took 2 to 3 weeks. The total of 9 speakers participated in the elicitation and their age ranged between 26 and 48 years, with similar numbers of female and male participants. Most speakers were between 24 and 33 years old, with only 2 speakers being 48 years old. All participants speak Nafsan, Bislama and a foreign language which was either English or French, depending on the school they attended. Five speakers produced all the storyboards used

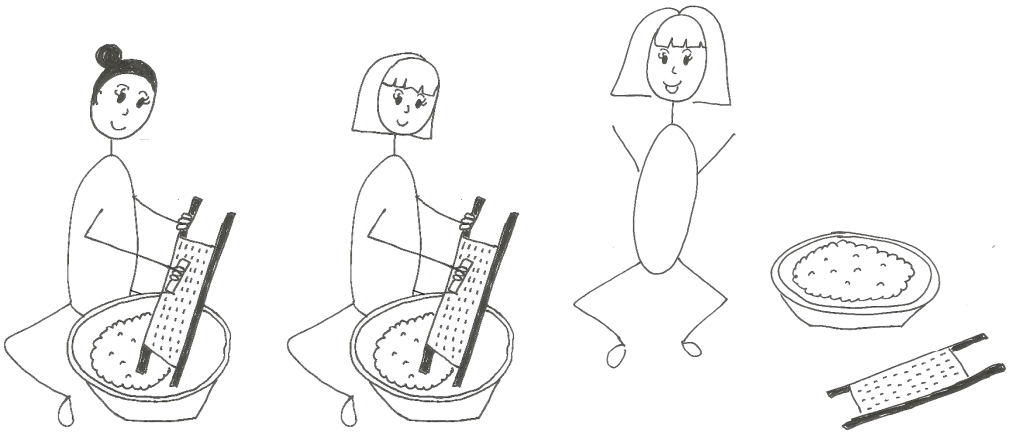

Figure 3.3: "While Lili is grating pink taro, Mary is grating white taro." Targeted context: "Mary says: I have grated the taro, what do we do now?", from "Making laplap" (Krajinović, 2018c) (AK1-166-01)

in the MelaTAMP project (in bold), and others produced some but not all storyboards. I followed the procedure for eliciting storyboards as proposed by Burton & Matthewson (2015), which can be summarized as follows. The linguist tells the story to the speaker in a meta-language, in the case of Vanuatu this is Bislama as the national language and English used in a few instances mentioned below. The speaker can then go through the story again and have a practice round if necessary. After the speaker feels comfortable and has understood the story, the linguist records her telling the story. In case the speaker did not produce the targeted sentence, the linguist can elicit directly the desired form, having the advantage of having the sentence embedded in a clear semantic context.

In my first field trip, the speakers were first presented with the storyboard with Bislama subtitles explaining each picture. The Bislama translations of the MelaTAMP and Totem field storyboards were created by Kilu von Prince, as a part of the MelaTAMP project. Only a few additional storyboards outside of the scope of the MelaTAMP project were presented with English subtitles and these were elicited only with speakers who had a good level of English. These storyboards are "Hawaii trip", "Chameleon story", "Sick girl" , "Feeding fluffy", see Table 3.3. After the participants heard the story from me, they were asked if they could tell the story with the same set of pictures, but this time without the Bislama (or English) subtitles. Most speakers did not feel comfortable with telling the story just with the blank storyboard, so in most cases they were telling the story from the blank version, while also occasionally looking at the version with Bislama subtitles. With one of the speakers I recorded two versions of each story: one with the Bislama version, and one with the blank version. In a few instances, I also asked speakers to tell the story one more time, because I noticed a large number of borrowings from Bislama. Having the two versions of each story from one of the speakers proved to be very useful because it showed that the chosen grammatical constructions in Nafsan did not differ from one version to another, which means that there was no visible influence of Bislama. Moreover, using only the blank version had the disadvantage that the speaker sometimes did not produce the targeted sentences. Therefore, letting speakers tell the story from both versions at the

same time proved to be the most economic and successful way of elicitation. Most story tellings were followed by an elicitation about the targeted contexts, but depending on the speaker's understanding of my questions, the reliability of those elicitations varies. One result of the storyboard collection in 2017 is the storybook *Natrauswen ni teesa nen rumtri ki nafsan ni Erakor* 'Children book written in the language of Erakor', which contains all the storyboard stories accompanied by text in Nafsan. I distributed several storybooks across speakers who participated in my fieldwork.

In my second field trip in 2018, 6 speakers participated in the study and were between 28 and 50 years old, with the same numbers of female and male speakers. All the participants were speakers of Nafsan and Bislama, and additionally either French or English. The translations of the storyboards from English to Bislama were done in Erakor with Gray Kaltaƥau and Lionel Emil, as two participants with a high level of English, who also worked with me on the TMA questionnaires discussed in the beginning of this section and who had the affinity to work on my elicitation tasks. The process of elicitation of storyboards proved to be easier in comparison to 2017. Out of the total 6 speakers, 3 of them had already participated in the 2017 study. These 3 speakers had more confidence in the storyboard task and were able to produce a story from the storyboards without consulting the Bislama subtitles. This showed me that, when given enough time for practice rounds and confidence building, speakers were able to produce the task as ideally intended by Burton & Matthewson (2015). Most importantly, the success of these speakers was not based solely on their knowledge of the storyboard method. It was in big part a result of the ease they felt when working with me, due to our ongoing friendship. Unfortunately, the limited amount of time of being in the field restricted my relationships with other speakers and the time I could spend per storyboard recording. Nevertheless, as explained above, even when speakers consulted the Bislama subtitles, there was no perceivable effect of translation. Another aspect worth mentioning are cultural references in storyboards. The storyboards created in the MelaTAMP project, including the ones I created, are situated in the Pacific cultural context, while the Totem field storyboards contain references to the Western (Canadian) culture and history in some stories. However, in my work in Erakor I did not notice any influence of the storyboard topic on the overall understanding of the task. All the participants in my study attended schools in either French or English, which could explain their familiarity with storytelling from different cultures. All the storyboard recordings from 2017 and 2018 were transcribed in ELAN, usually with the help of participants in both the transcription and translation (for more details on community engagement see Krajinović et al., 2019).

There are two other methods I used in my data collection. The first is the traditional elicitation which includes asking for translations from English to Nafsan, followed by a meta-linguistic discussion about different contexts in which the obtained forms can be used. I applied this method in order to understand more abstract distinctions in Nafsan which I could not easily represent in a storyboard. One example of such a distinction are different interpretations of complement clauses. Examples (7) and (8) exemplify a contrast between 'want' and 'like' that is based on the mood and aspect used in the complement clause (see Section 8.6.2). This distinction would be hard to elicit without asking for translations. All the examples elicited in this way are referenced as "elicited". Sometimes I also elicited some structures through an online chat with the participants, and in these

cases the reference contains the date and the name of the speaker.

(7) *A=**mur** **ka=tae** nafsan.*
1SG=want 1SG.IRR=know language
'I want to know Nafsan.' (Elicited, AK1-045-01, 00:06:20.880-00:06:24.921)

(8) *A=trau **mur-i-n** **kin** **a=to** tae nafsan.*
1SG=really like-TS-3SG.OBJ COMP 1SG=PROG know language
'I really like that I am learning Nafsan right now.' (Elicited, AK1-045-01, 00:06:41.180-00:06:49.570)

I also elicited a few impromptu dialogs and narratives. I would tell speakers which topic I am interested in and record them making a dialog or a narrative. The topics I chose were usually based on contexts in real life in which I observed speakers using specific structures. Speakers had no problem in performing this task, probably due to the level of familiarity with everyday topics I proposed and the level of familiarity with their interlocutors. These types of data have also proved to contain important contexts in which specific TMA functions can be identified.

One other type of data was considered in this work. Although the focus of this work is a synchronic rather than a diachronic analysis, in the context of providing additional arguments for the semantics of perfect subject proclitics in Section 5.1.1 I briefly mention diachronic data of Nafsan. This data is the Nafsan Bible translation of Genesis from the 19th century, translated by Rev. J.Cosh in 1874 and collected by Thieberger (1864). As mentioned in Section 2.3.1 there have been missionary works on Bible translations to Nafsan and other Efate languages since 1868 (Thieberger, 2006; Thieberger & Ballard, 2008).

3.4 Typological perspective and semantic maps

In this section I discuss the nature of the typological perspective of this work and the methods used to achieve it.

Besides situating the analysis of the Nafsan realis/irrealis and perfect categories within typological debates about their cross-linguistic validity, I also compare the Nafsan data to several other Oceanic languages. I use published articles and grammars of Oceanic languages and, whenever possible, corpora and parallel storyboards from the MelaTAMP project or otherwise. The choice of Oceanic languages to be considered is based on the existence of categories of realis/irrealis and perfect (or 'already') in their grammars, and the degree of detail in their descriptions. For instance, in the case of the perfect aspect, I considered grammars and articles which provide positive or negative evidence for the existence of most of the functions of perfect considered in this study. Regarding the realis/irrealis distinction, several Oceanic languages in which this distinction was identified are taken as exemplifying some of its properties. In the case of the reanalysis of the realis mood, I focused on two Oceanic languages which seem to have a very similar problem in analyzing realis as in Nafsan. Note that in comparison to the targeted semantic data of Nafsan I collected in fieldwork, many Oceanic languages with structures similar to Nafsan and studied here usually do not provide sufficient fine-grained data for an entirely parallel comparison with Nafsan. However, this does not

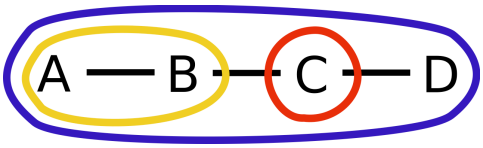

Figure 3.4: A model of a semantic map with semantic functions A, B, C, D and imaginary category boundaries in blue, yellow, and red

hinder the aims of this work, since the available descriptions of other relevant Oceanic languages are only used as measures of whether certain predictions made by the Nafsan analysis can capture some Oceanic and possibly wider cross-linguistic tendencies.

One method I use for comparing TMA functions in Nafsan and other Oceanic languages is the creation of semantic maps. Semantic maps are geometrical representations of semantic functions and their relationships cross-linguistically. The aim of semantic maps is to represent the universal cognitive relationships of meaning underlying cross-linguistic variation (Croft, 2001; Regier et al., 2013). The semantic functions (nodes in the semantic map) are placed next to other closely related semantic functions and connected via connecting lines. As noted by Croft (2001), the nodes need not be strictly semantic meanings, they can also represent pragmatic and discourse knowledge related to the meaning of the studied item. As we can see in Figure 3.4, the colored lines indicate the semantic space covered by imaginary grammatical categories, which could represent three categories within one language or in three different languages. A semantic function is chosen to be represented as a node if there is at least one language which has a dedicated marker for that function (Haspelmath, 2003; Georgakopoulos & Polis, 2018). Since the adjacency of one function to another is based on their semantic similarity, one lexeme or a grammatical category has to cover a connected area in the semantic map (Croft, 2001; Haspelmath, 2003; Gärdenfors, 2014). This means that a map in which one category has disjoint functions, as shown in Figure 3.5, is incorrect because it does not fulfill the purpose of semantic maps, which is to map the similarity between functions expressed by the same category. This rule of connectivity is supported by observations about linguistic systems cross-linguistically (see also Gärdenfors, 2014). We can illustrate this with a simplified semantic map of tense in Figure 3.6. The semantic map under a) shows a tripartite system with tense categories dedicated to past, present, and future, while b) and c) show the non-future/future and past/non-past distinctions, respectively. This map predicts that there are no tense categories of present/non-present. Depending on one's definition of tense, there are categories that could be analyzed as counter-evidence to this prediction. This is the case of categories that express temporal immediacy or remoteness, which can refer to either past or future, but not present (this has been noted most frequently for adverbs, see Tent 1998).[7] This simple illustration shows us the motivation for assuming the connectivity hypothesis (Croft, 2001), and how, by adopting it, semantic maps generate testable predictions about possible distributions of semantic functions cross-linguistically.

The reasons for using the method of semantic maps in this work are threefold: semantic maps

[7]In Oceanic languages, there are cases of grammatical morphemes expressing temporal immediacy with reference to either past or future, see markers with the dedicated 'hot news' meaning in Chapter 6.

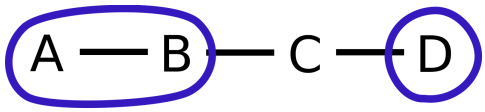

Figure 3.5: A model of a semantic map with an incorrect placement of functions

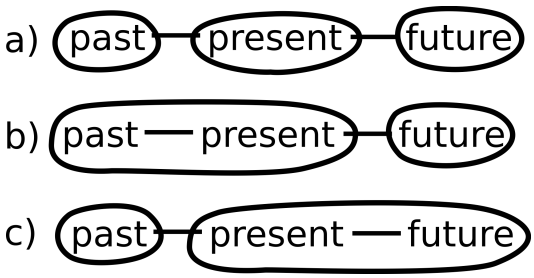

Figure 3.6: Semantic map of tense in three most frequently attested linguistic systems

enable easier cross-linguistic comparison, they generate cross-linguistically testable predictions, and they are agnostic as to the monosemy or polysemy of the studied item (Haspelmath, 2003). The cross-linguistic comparison between TMA categories in different languages is possible only when fine-grained semantic meanings that constitute these categories are identified and compared. Thus, choosing these basic semantic functions and determining their relationships based on language data permits relating categories of different languages to each other without assuming their analysis *a priori*. The fact that semantic maps do not assume any particular semantic analysis enables them to remain agnostic as to the monosemy or polysemy. This is advantageous in typological research, because we want to compare similar categories in different languages, even when they are analyzed differently in terms of their semantics. Moreover, semantic maps generate transparent predictions that aim at capturing universal cognitive relationships between different meanings. Because of this, semantic maps are a powerful scientific tool for testing and creating new theories of meaning.

The semantic maps presented so far are sometimes called "classical" semantic maps (van der Auwera, 2008; Georgakopoulos & Polis, 2018). The other type of semantic maps are "proximity" maps, whose meanings are represented as data points which are distributed on a two-dimensional space typically via Multi-Dimensional Scaling (Georgakopoulos & Polis, 2018). They are called proximity maps because they display the semantic proximity of different meanings, based on large quantitative data of parallel texts/questionnaires from different languages. Some proximity maps about TMA categories were created by Croft & Poole (2008), Dahl (2014b), Dahl & Wälchli (2016), and van der Klis et al. (2017). Dahl & Wälchli's (2016) maps is discussed in Section 6.2. In this work I use classical semantic maps because I work with uncontrolled linguistic data based on grammatical descriptions of different languages (with the exception of MelaTAMP parallel storyboards). Moreover, the work on proximity maps typically does not generate strong predictions about expected relationships between different meanings. The visualization of proximity of data points is intended to prompt an inference of typological tendencies (Croft & Poole, 2008) and not to postulate a testable theory of meaning. The aim of this work, however, is to postulate a stronger falsifiable theory of how different semantic

TMA functions are related cross-linguistically, for which classical semantic maps are better suited.

Part III

Aspect: perfect

Chapter 4

Perfect aspect and related categories

As we saw in Chapters 1 and 2, Nafsan and other Oceanic languages have a distinct perfect category, which has, due to its additional functions in comparison to the English perfect, also been claimed to be a distinct category called "iamitive". In this chapter I discuss the semantic definition of perfect adopted in this work, as well as iamitives and 'already' as TMA categories which are considered to be related to it, before turning to a detailed discussion of the Nafsan perfect category in this context in Chapter 5.

4.1 The semantics of perfect based on English

The study of perfect has attracted a lot of research in formal semantic approaches to English and other Indo-European languages (e.g. McCoard, 1978; McCawley, 1981; Kamp & Reyle, 1993; Klein, 1994; Michaelis, 1994; Iatridou et al., 2003; Pancheva, 2003; Portner, 2003; de Swart, 2007; Mittwoch, 2008; Rothstein, 2008; Nishiyama & Koenig, 2010), as well as in semantics of non-Indo-European languages (e.g. Li et al., 1982; Howard, 2000; Tatevosov, 2001; Koontz-Garboden, 2007; Matthewson et al., 2015; Tallman & Stout, 2016), and in cross-linguistic typological studies (e.g. Comrie, 1976; Dahl, 1985; Bybee et al., 1994; Dahl & Velupillai, 2013b; Bertrand et al., 2017). Grønn & von Stechow (in press) list three main theoretical approaches to perfect in English: the anteriority analysis (e.g. Klein, 1994), the result state analysis (e.g. Kamp & Reyle, 1993), and the extended now analysis (e.g. McCoard, 1978; Dowty, 1979). Among these different approaches there is still no theoretical consensus on how different functions of perfect should be semantically or pragmatically derived, nor which perfect functions are cross-linguistically present. For this reason, I limit this discussion to describing the perfect functions which are attested in English and assumed to be cross-linguistic, at least to the extent that they were assumed as functions of perfect in large-scale typological works by Dahl (1985) and Dahl & Velupillai (2013b). I also outline a widely accepted semantic approach to perfect by Klein (1994), which is adopted in this work.

Comrie (1976) lists the functions of the English present perfect as in (1), which are also assumed by the authors cited above.

(1) a. perfect of result, also called *resultative*
b. existential perfect, also called *experiential*
c. perfect of persistent situation, also called *universal*
d. perfect of recent past, also called *'hot news' perfect*

The perfect of result refers to a present state that is a result of some past event (Comrie, 1976:56). I refer to this function as *resultative*.[1] This meaning of perfect is possible in English only with telic predicates (e.g. Kiparsky, 2002; Koontz-Garboden, 2007). Comrie (1976:56) illustrates the resultative perfect with (2) in which John's arrival is a past event and the result state referred to by the perfect denotes that John is now here. This notion of current relevance of a past event is considered by many linguists as one of the defining properties of the present perfect (Bybee et al., 1994; Comrie, 1976) and plays an important role in some formal approaches (McCoard, 1978; Iatridou et al., 2003).

(2) John has arrived.

The second function of the present perfect is the experiential perfect, which indicates that the described event happened at least once at any time in past (Comrie, 1976:58). Dahl & Velupillai (2013b) consider the resultative and the experiential functions of perfect to be the core functions of the perfect category cross-linguistically. Example (3) asserts that 'at some moment in my life up to now I spent time in Paris'. It is typically assumed that the interpretation that this type of event happened one *or more* times up to now is due to the iterative aspect of the predicate (Kiparsky, 2002). Thus, the experiential perfect is said to be incompatible with events that cannot be repeated anymore, as shown in (4) and (5).

(3) I have been to Paris.

(4) *Fred has been born in Paris. (Kiparsky, 2002)

(5) *Einstein has visited Princeton. (Chomsky, 1970)

The third function of the present perfect is the perfect of persistent situation, which I refer to as the *universal* function of perfect. This meaning indicates that the described state/event started in the past and still obtains in the present (Comrie, 1976:60), as in (6). This reading of present perfect is limited to stative and progressive situations (Iatridou et al., 2003).

(6) John has been living in Paris since 2007.

The last function listed here is the perfect of recent past, also called *'hot news' perfect*, which indicates that the described event occurred in the recent past. The predicate typically includes adverbials such as 'recently' and 'just' (Comrie, 1976:60), as in (7).

(7) John has just arrived.

[1] This term should not be confused with the "resultative" category in the sense of Nedjalkov (1988), see footnote 6 in this chapter.

The past and the future perfect differ from the present perfect in that they prototypically have a reading of anteriority in relation to a given reference time. In (8) we see this with the past perfect and in (9) with the future perfect.

(8) When you arrived, I had already written the letter.

(9) When you arrive, I will have written the letter.

At first, the functions of perfect listed above might appear quite different from each other. In fact, a large amount of research on the English perfect deals exactly with the questions of whether the perfect is polysemous or not, and whether its different readings are derived semantically or pragmatically. Two common debates have to do with discussing how to differentiate the experiential and the universal function (Dowty, 1979; Mittwoch, 1988; Klein, 1994; Iatridou et al., 2003), and whether the anteriority meaning of the past and future perfect should be treated as a case of polysemy, in some accounts interpreted as relative tense (see Comrie, 1985; Dahl, 1985; Kiparsky, 2002; Bohnemeyer, 2014; Kroeger, 2019). Klein's (1994) proposal followed in this work assumes that perfect is monosemous in that it has a general underlying semantic definition that is susceptible to various interpretations listed above, dependent on grammatical/quantificational aspect, telicity and temporal adverbials. The motivation for adopting this approach will become clear in Chapter 5 in which I show that Nafsan has almost all of the above mentioned functions of perfect, which do not preclude the necessity to assume polysemy.

In order to define perfect semantically, we need three main concepts from Klein (1994), which are based on Reichenbach's (1947) theory of tense and aspect:

- Topic Time (TT): the interval of time the assertion is about
- Situation Time (TSit): the interval of time at which the event takes place
- Utterance Time (UT): the interval of time at which the utterance is produced

A famous example from Klein (1994:4) illustrating these distinctions is shown in (10). The first sentence sets the TT with 'when you looked into the room' and two TSits of 'being on the table' and 'being in Russian' are contained in that TT. However, since they denote states they also hold true at times prior and posterior to the TT. They are both in the past tense because they precede the UT.

(10) What did you notice **when you looked into the room**?
There **was** a book on the table. It **was** in Russian.

For Klein (1994), tense is defined as the relationship between the TT and the UT, and aspect is defined as the relationship between the TT and the TSit. Notice that this means that for Klein (1994) there is no need to postulate the existence of relative tenses, as they are combinations of tense and aspect (for a discussion on this see Bohnemeyer, 2014). Klein's (1994) definitions of temporal and aspectual categories are listed in Table 4.1.

Table 4.1: Klein's (1994) definitions of temporal and aspectual categories

Relationship between TT, TSit, and UT	Category
TT included in TSit	imperfective aspect
TT at TSit	perfective aspect
TT after TSit	**perfect** aspect
TT before TSit	prospective aspect
TT before UT	past tense
UT included in TT	present tense
TT after UT	future tense

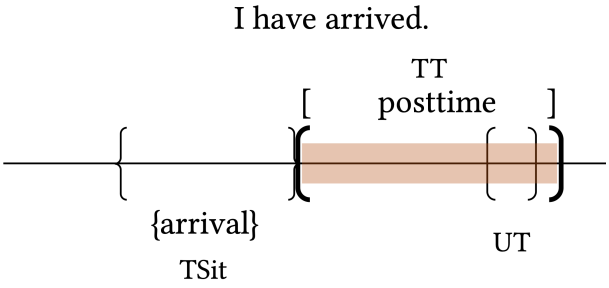

Figure 4.1: Representation of the resultative present perfect

Klein (1994) defines the perfect aspect as situating the Topic Time in the posttime of TSit. This is illustrated with the sentence 'I have arrived' in Figure 4.1 (repeated from Chapter 1). The same illustration could represent the 'hot news' perfect in which an adverbial such as 'just' would strictly indicate that the TT immediately follows the TSit. This need not to be the case in readings other than the 'hot news' perfect, for examples see Figures 4.4 and 4.5.

As we can see, this definition of the perfect as referring to the posttime of the event in question captures the behavior of perfect with the functions listed in (1), but it also sets the resultative meaning as its prototypical function. Other functions of perfect require some additional context to arise. The experiential perfect is obtained when the event described in TSit is potentially iterative. This reading is illustrated in Figure 4.2.

The universal perfect is often recognized by the presence of adverbials introduced by 'since', which set the starting point of TSit, or 'for', which sets the duration of TSit. The universal reading arises with states and progressives, as illustrated in Figure 4.3. Although in this reading it might seem like the TSit continues into the TT (posttime), Klein (1994:112) shows that the universal perfect simply denotes that the TT is in the posttime of an event that started at a particular time or had a particular duration, which means that the perfect only refers to the posttime of TSit, as in Figure 4.3. The interpretation of continuity refers only to the state, such as 'live', and not to the whole proposition of 'live since 2007'. Thus, the interpretation of continuity is due to the stative aspect of

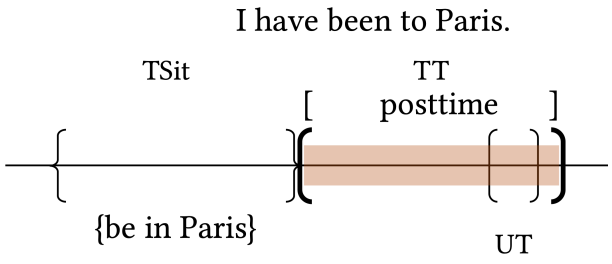

Figure 4.2: Representation of the experiential present perfect

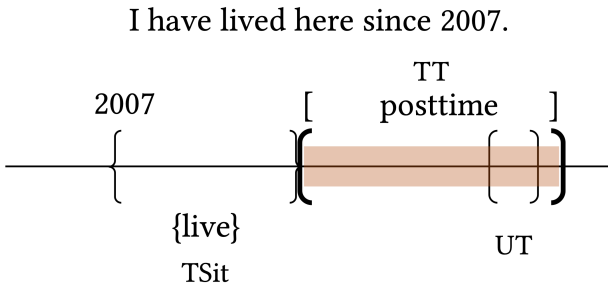

Figure 4.3: Representation of the universal present perfect

'live' and is independent of the perfect itself.

The anteriority reading that is obtained with the past and the future perfect is illustrated in Figures 4.4 and 4.5, respectively. In both cases the posttime and the TT 'when you arrive' overlap because the perfect situates the TT in the posttime of TSit. Note that the posttime of TSit and the TT ('when you arrive') do not coincide completely. The definition of perfect does not say how long the TT is after TSit: the TSit can immediately precede the TT (Figure 4.1) or it can be in a more distant past, depending on the context (Klein, 1992:538). Thus, 'being in the posttime of writing the letter when you arrived' means that the event of 'writing the letter' preceded the event of 'you arriving'.

One interesting property of the present perfect is that it *cannot* combine with any temporal ad-

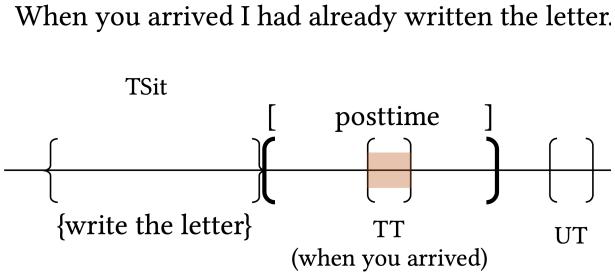

Figure 4.4: Representation of the past perfect

When you arrive, I will have written the letter.

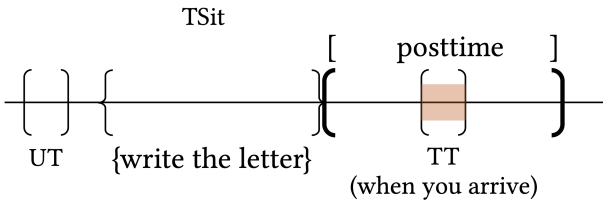

Figure 4.5: Representation of the future perfect

Mary came to visit John at twelve o'clock;
but John had left at ten o'clock.

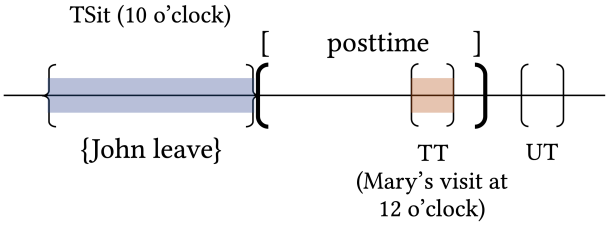

Figure 4.6: Representation of example (13a)

verbs that specify the position of the time interval denoted by the described event, such as 'yesterday' or 'last year' (Klein, 1992), as shown in (11). This restriction also holds with WH-words referring to a time interval at which the event took place, as shown in (12).

(11) *John has arrived yesterday/last year/at 3 o'clock.

(12) *When has John arrived?

On the other hand, the past perfect does not have such restrictions, and in fact offers two distinct meanings in the presence of a past temporal adverbial, as shown in (13). The interpretation of (13a) says that the event of 'John leaving' happened at ten o'clock and in (13b) we understand that John left before ten o'clock. Thus, in (13a) the adverbial of ten o'clock is contained in TSit and twelve o'clock is the TT. In (13b), on the other hand, ten o'clock is the TT. This is illustrated in Figures 4.6 and 4.7, respectively. The same interpretations are equally possible with the future perfect.

(13) a. Mary came to visit John at twelve o'clock, but John had left at ten o'clock.
b. Mary came to visit John at ten o'clock, but John had already left at ten o'clock. (Comrie, 1985:66)

We can conclude that the main difference between the present and the past perfect, in terms of co-occurrences with adverbials, can be described as the past perfect allowing temporal adverbials in the TSit, and the present perfect not allowing any past temporal adverbials in the TSit (Klein, 1992).

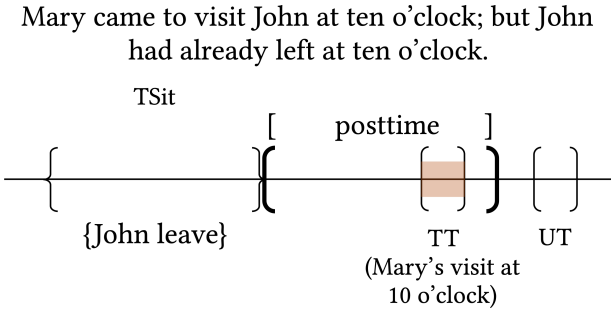

Figure 4.7: Representation of example (13b)

However, this interpretation is not without problems, as the question here is why the past perfect allows past adverbials in TSit (13a) and the present perfect does not (11). There have been several proposals in formal semantics dealing with this "present perfect puzzle" and each one focuses on different aspects of this problem. Most of the approaches exploit the difference between the present and the past tense component in order to explain the differences in the interpretation (e.g. Klein, 1992; Kiparsky, 2002; Pancheva & von Stechow, 2004). For example, some linguists prefer to assume that all temporal adverbials can only establish the reference time (here TT) and cannot appear in the TSit (Kiparsky, 2002; Kroeger, 2019). If that is the case, then the incompatibility of the present perfect with past adverbials is simply due to the fact that the they are situated in the past and do not include the utterance time (Kiparsky, 2002). This is further supported by examples like (14) in which the present tense adverbial 'today' *is* compatible with the present perfect. However, Klein's (1992) proposal that the past adverbs in cases like (13a) can be situated in the TSit accounts for the difference in interpretation between (13a) and (13b), which cannot be explained under Kiparsky's (2002) and Kroeger's (2019) analysis. In order to describe this difference in meaning while maintaining his analysis, Kiparsky (2002) assumes that the perfect in (13a) is in fact the experiential perfect and the perfect in (13b) is the resultative perfect. This conclusion is not appealing, because it is not clear how the iterative component of the experiential meaning is expressed in (13a) and why the same example could not be interpreted in the resultative meaning.

(14) John has arrived today.

Considering the evidence in (14), Klein (1992) points out that 'today' is an indefinite adverbial which includes the whole posttime of 'arriving', and that the present perfect is not compatible with any definite adverbials which include or refer to the utterance time directly, as shown in (15). Klein (1992) also offers a discussion on why other indefinite adverbs, like 'just', 'recently', and 'before' are all compatible with the present perfect (16).

(15) *John has arrived right now/at present.

(16) John has been to Paris before.

On the other hand, other linguists who support the analysis that temporal adverbs occur only in the reference time manage to explain the contrast in (13a) and (13b) by treating (13a) as a case of relative tense and (13b) as the perfect aspect (Bohnemeyer, 2014; Kroeger, 2019).[2] However, the problem with this analysis is that it assumes two different semantic definitions for the same grammatical structure and loses the elegance of a unifying explanation for the meanings of past perfect. One reason to assume Bohnemeyer's (2014) and Kroeger's (2019) proposal would be if a language at hand had two different forms for the meanings corresponding to (13a) and (13b), but that is not the case either in English or in Nafsan.[3]

As a solution to the "present perfect puzzle", Klein (1992:545) proposes the following difference between the present and the past tense. Within its semantics, the present tense can fix only a definite position of TT on the time axis (the one of referring to the UT). Unlike the present, the past and the future tense do not have this constraint, as the position of their TTs is not necessarily definite. Klein (1992:545) exemplifies this with the contrast between *Chris is ill*, which has only one possible TT overlapping with the UT, while *Chris was ill* can refer to several TT's in which Chris was ill in the past. Based on this, Klein (1992:546) proposed the following pragmatic constraint:

(17) In an utterance, the expression of TT and the expression of TSit cannot both be independently fixed in a definite position on the time axis.

Klein (1992:546) corroborates this constraint with examples (18) and (19), where both the TT and the TSit have a definite position on the time axis within the same sentence. In (18), the position of TT is explicitly specified by 'at seven', and in (19) the position of TT is explicitly specified by the present tense in 'has'.

(18) *At seven, Chris had left at six.

(19) *Chris has left at six.

According to Klein's (1992) proposal, it would be pragmatically odd (but not false) to confine our claim in (18) to the specific time interval 'at seven' at which Chris was in the posttime of leaving at six. In (19) it would also be pragmatically odd to single out the utterance time as the time at which Chris is in the posttime of leaving at six. The oddness of (18) is also due to the fact that both 'at seven' and 'at six' are new information, which means that there should be contextually possible alternatives for which the sentence is not true. However, if 'at six' is fixed, then there are alternatives of 'at seven' for which the sentence would also be true (Manfred Krifka, personal communication, see also Krifka 1992). Klein's (1992) proposal is attractive in that it provides a single explanation for the behavior of the present, past, and future perfect.

The "present perfect puzzle" is still hotly debated in formal semantics (e.g. Kiparsky, 2002; Katz,

[2]For a similar approach see also Mittwoch (2014).

[3]Even if such a language has been attested, that finding would not be a direct evidence that the theory of the English or the Nafsan perfect has to change in order to reflect the properties of that language. TMA categories in different languages can have different semantic definitions and it is still more desirable to find a unifying semantic definition for one grammatical category.

2003; Portner, 2003; Pancheva & von Stechow, 2004; Terry, 2006; Schaden, 2009; Kamp et al., 2015; Grønn & von Stechow, in press) and I do not intend to offer a definite solution to this problem. The reason I discussed this issue in some detail is because this puzzle is also present in Nafsan. The Nafsan perfect exhibits almost the same pattern of co-occurrences of perfect and temporal adverbials as the English perfect, despite its lack of tense categories. While the Nafsan perfect with past reference is compatible with temporal adverbials referring to the time at which the event took place, the perfect with the present reference is not (see Section 5.2.1). This property of the Nafsan perfect sets it apart from other types of perfect-like categories hypothesized to exist in Oceanic languages, such as iamitives.

4.2 Cross-linguistic categories related to perfect

In this section I discuss the perfect and other TMA categories which are either semantically related to it, or which have been proposed as new cross-linguistic categories. I focus on the perfect as a cross-linguistic category, the proposed NEWSIT (Ebert, 2001) and iamitive (Olsson, 2013) categories, and the aspectual particle 'already', which is considered to be related to the iamitive semantics as its diachronic source (Olsson, 2013; Dahl, 2014a).

4.2.1 'Already' and other aspectual particles

In this section I analyze the semantics of 'already', an aspectual particle which is considered to be one of formative elements of the iamitive semantics (discussed in Section 4.2.2). The meaning of 'already' interacts with other aspectual particles through negation, and for that reason they are also analyzed here.

The meaning of 'already' and other aspectual particles has a long tradition of research in formal semantics and typology, and it is characterized by several approaches. For instance, Löbner (1989) defines the meaning of 'already' as involving an assertion P and a presupposition ¬P which result in an interpretation of change of state, as shown in Figure 4.8. Another approach considers that 'already' is also semantically defined by the expression of speaker's expectations (van der Auwera, 1993; Michaelis, 1996; van Baar, 1997). The approaches followed in this work are Löbner's (1989) duality proposal for interactions of aspectual particles through negation, and Krifka's (2000) analysis of aspectual particles as focus-sensitive operators that place restrictions on the alternatives of the focus. I also follow Krifka (2000) and Vander Klok & Matthewson (2015) in analyzing the change of state meaning of 'already' as a conversational implicature.

The aspectual particles[4] 'already' 'still', 'not yet', and 'not anymore' stand in a special relationship when it comes to negation, and the pattern of these relationships is called "duality". Löbner (1989) noticed that the outer negation of 'already' is truth-conditionally equivalent to the inner negation of 'still' (20). Also, the outer negation of 'still' is truth-conditionally equivalent to the inner negation of 'already' (21) (Löbner, 1989). Thus, 'already' and 'still' are duals. In English the duality pattern,

[4]This term was introduced by König (1991).

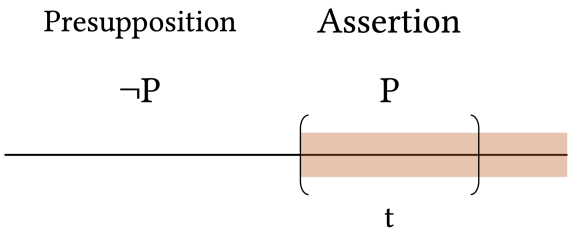

Figure 4.8: Representation of Löbner's (1989) analysis of 'already' (t = interval of time)

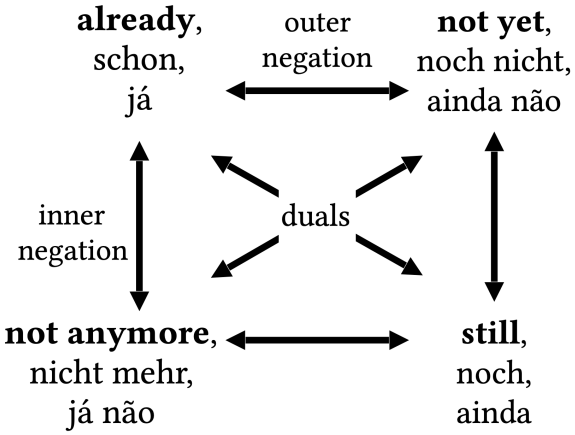

Figure 4.9: Duality schema with English, German, and Portuguese particles, based on Löbner (1989)

as in (20)-(21), is not as transparent as in some languages, because ¬already [p] and ¬still [p] have suppletive forms 'not yet' and 'not anymore', respectively. If we compare this to a more transparent language, like Portuguese [por], we find that if we negate *já* 'already', we get *já não* 'not anymore', and if we negate *ainda* 'still', we get *ainda não* 'not yet'. However, note that even in English 'yet' is also used with the meaning of 'already' in questions (Krifka, 2000; Traugott & Waterhouse, 1969). The set of these relationships is illustrated in Figure 5.4, including English, German, and Portuguese aspectual particles that express these meanings.

(20) ¬already [p] = still [¬p]
It is not yet [raining] = It is still [not raining]. (Vander Klok & Matthewson, 2015:184)

(21) ¬still [p] = already [¬p]
It is not [raining] anymore. It is already [not raining]. (Vander Klok & Matthewson, 2015:184)

The second component of the meaning of aspectual particles has to do with pragmatic effects of expectedness. According to Krifka (2000), all aspectual particles are focus-sensitive. Focus requires

that there is at least one alternative to the asserted expression, and aspectual particles then express a restriction of the considered alternatives of the focus, which are ordered in a specific way, e.g. numerically or temporally. In (22) and (23), where '3 months old' is the focus, we can see the contrast between the presence and absence of 'already' in terms of considered and asserted alternatives. While the neutral sentence in (22) makes no restriction on the considered alternatives, 'already' presupposes that the only salient alternatives for Lydia's age are ranked lower than the asserted focus (23). In (24) we can see the representation of 'not yet', which maintains the same presupposition of restriction on the alternatives as 'already' and negates the focus. 'Still' and 'not anymore' however, indicate that the alternatives are ranked higher than the focus (25), with the only difference between the two being the negation of the focus by 'not anymore' (26).

(22) Lydia is 3 months old. (Krifka, 2000:405)
Alternatives considered: 1 2 3 4 5 months old
Alternatives asserted: 3 months old

(23) Lydia is **already** 3 months old. (Krifka, 2000:405)
Alternatives considered: 1 2 3 months old
Alternatives asserted: 3 months old

(24) Lydia is **not yet (not already)** 3 months old. (Krifka, 2000:410)
Alternatives considered: 1 2 3 months old
Alternatives asserted: ¬3 months old

(25) Lydia is **still** 3 months old. (Krifka, 2000:405)
Alternatives considered: 3 4 5 months old
Alternatives asserted: 3 months old

(26) Lydia is **not** 3 months old **anymore (not still)**. (Krifka, 2000:410)
Alternatives considered: 3 4 5 months old
Alternatives asserted: ¬3 months old

This semantics of aspectual particles gives rise to pragmatic effects governed by conversational implicatures, which have in some other approaches been interpreted as being a part of the particles' semantics (van der Auwera, 1993). Krifka (2000:405) reasons about this in the following way. 'Already' indicates that Lydia's age is the greatest of those that are considered as relevant in a given context. If we assume that the "expected" age is the average of the alternatives, then 'already' and 'still' depart from these expected values in particular directions. In the case of 'already' (23) this gives rise to the implicature that Lydia's age is greater than expected, and in the case of 'still' (25) it gives

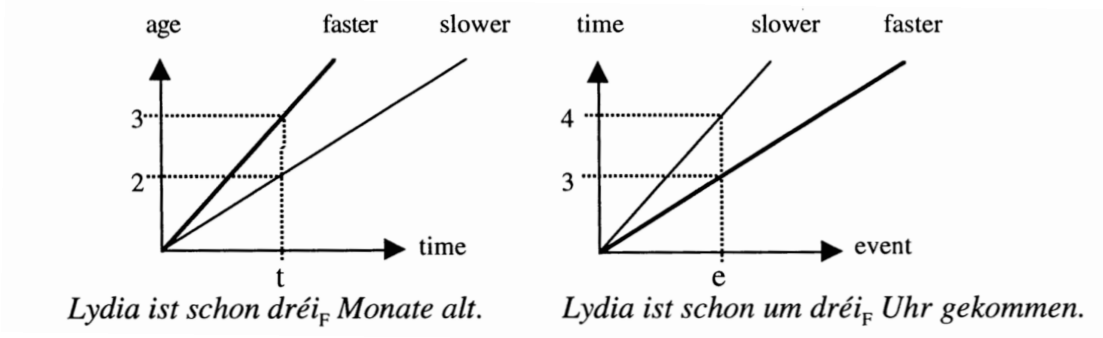

Figure 4.10: Representation of Krifka's (2000) analysis of the meaning of 'already', adopted from Krifka (2000:410)

rise to the implicature that Lydia's age is lower than expected. In examples (22)-(26), the considered alternatives refer to the age which is ordered numerically. However, when the alternatives are ordered temporally there is an implication that the described event happened earlier than expected, as in (27). In order to explain this Krifka (2000) redefines 'already' as requiring that the asserted event has a faster development speed than the alternatives. Assuming that the alternatives are ordered in terms of the "fastest development speed" results in Lydia's age being the greatest among the alternative ages and in Lydia's arrival in (27) being the earliest among the alternative arrival times. The latter leads to an implicature that Lydia arrived earlier than expected. This is illustrated in Figure 4.10.

(27) Lydia already arrived at 3 p.m. (Krifka, 2000; Vander Klok & Matthewson, 2015:200)
Alternatives considered: 3 p.m. 4 p.m. 5 p.m.
Alternatives asserted: 3 p.m.

As we have seen, Krifka's (2000) analysis of 'already' differs from Löbner's (1989) in that it does not assume the existence of a ¬P presupposition resulting in a meaning of change of state, cf. Figures 4.8 and 4.10. Nevertheless, in Krifka's (2000) approach, the reference to a previous negative state can be analyzed as a conversational implicature. Vander Klok & Matthewson (2015:201) describe the derivation of this conversational implicature in the following way:

> "If the speaker is conveying that the predicate becomes true at an earlier time point than would have been expected, then the speaker does not believe the predicate to be timelessly true. On the contrary, the speaker is acutely aware of a previous time interval during which the predicate did not hold. From this, the hearer concludes that there was an immediately prior time interval at which the plain proposition is false."

Löbner (1989) also showed that German has an additional focus particle, *erst* (which can be roughly translated as 'only (then)' in English), which replaces *noch* 'still' as a dual of *schon* 'already' in the following situation described by Löbner (1989:190): "*noch* is used in those cases where the state

p and the contrasting posterior state represent an exhaustive (or binary) alternative, *erst* in contrast is used if there are more than these two possibilities". This can be illustrated with our examples about Lydia's age. In (28), Lydia's age is contrasted to only one month older than her actual age, so the appropriate answer in (28b) can include *noch* 'still', and according to my German informants also *erst* 'only (then)'. But, if Lydia's age is contrasted with the age of several months older (29), the appropriate answer in (29b) includes *erst* 'only' and not *noch* 'still'. In (28), there are two competing alternatives (3 and 4 months), and in (29) there are six competing alternatives referring to Lydia's age (3, 4, 5, 6, 7, 8, 9 months). This shows that *erst* makes no restrictions on the number of alternatives, while *noch* has the restriction of having only two alternatives. German differs from English in this regard because the English 'only' can be used to denote both quantity and temporal reference, while *erst* is used only in the temporal sense. Although the use of an aspectual particle specialized for the meaning equivalent to *erst* is not analyzed in the languages presented in this thesis, there is an indication that the meaning of change of state in some Oceanic languages is more related to *erst* rather than 'already', e.g. *wet* 'only.then' in Daakaka (von Prince, 2015:83).[5]

(28) a. *Ist Lydia* ***schon*** *4 Monate alt?*
be:3SG.PRS Lydia already 4 month:PL old
'Is she **already** 4 months old?'

b. *Nein, sie ist* ***noch/ erst*** *3 Monate alt.*
no 3SG.F be:3SG.PRS still only 3 month:PL old
'No, she is **still** 3 months old.'

(29) a. *Ist Lydia* ***schon*** *9 Monate alt?*
be:3SG.PRS Lydia already 9 month:PL old
'Is she **already** 9 months old?'

b. *Nein, sie ist* ***erst/ #noch*** *3 Monate alt.*
no 3SG.F be:3SG.PRS only #still 3 month:PL old
'No, she is **only** 3 months old.'

4.2.2 Perfect, NEWSIT, and iamitive

Some of the first typological studies that considered the perfect (based on the English prototype) as a cross-linguistic category are Dahl (1985), Bybee & Dahl (1989), and Bybee et al. (1994). As mentioned in Section 4.1, for Dahl & Velupillai (2013b), the core cross-linguistic functions of the perfect are the resultative[6] and the experiential perfect. In their typological WALS sample, Dahl & Velupillai (2013b) considered languages to have the perfect only if they had both of these functions expressed by one construction or form. Interestingly, most large-scale typological studies focus on the properties of

[5]The contrast between (28)-(29) is also attested in Croatian, where *tek* 'only' is the dual of *već* 'already' when there is two or more available alternatives. Just like in German, *još (uvijek)* 'still' would be used with two competing alternatives.

[6]Note that Bybee et al.'s (1994) terminology differs from Dahl (1985) and Dahl & Velupillai (2013b). Bybee et al. (1994) use the term "anterior" for the perfect and "resultative" to refer to a subpart of the resultative meaning of perfect. Following Nedjalkov (1988), for Bybee et al. (1994:54) "resultative" refers to "an intransitive verb, as in *He is gone*, without a change of subject" as a separate category different from perfect. In this work, "resultative" is always understood as the resultative function of perfect which is not restricted in transitivity.

the present perfect as the prototypical perfect. In Dahl's (1985) study, the pluperfect/past perfect was counted separately from the present perfect, due to potential categorial differences between the two (see Section 4.1). If we compare the numbers of languages with the present and the past perfect in Dahl's (1985) study, we find that the present perfect is slightly more common (24-35 languages in Dahl 1985:130) than the past perfect (19-23 languages in Dahl 1985:144-145). Interestingly, many languages that are listed as having the present perfect, but not the past perfect in Dahl (1985) are tenseless languages whose perfects have been later been analyzed as belonging to a typologically different kind of perfect called "iamitive" (Olsson, 2013). The Austronesian languages listed by Dahl (1985:130) as only marking the present perfect are Māori (see Section 6.3.5 for a different analysis), Indonesian [ind], Javanese [jav], Sundanese [sun], and Bugis Makassar [bug]. There are also two Southeast Asian languages (Kammu [kjg] and Thai [tha]) and a few Niger-Congo languages (Isekiri [its], Akan [aka], Yoruba [yor], and Wolof [wol]).

The idea that there is a different kind of perfect that can be identified in some languages originates from a proposed cross-linguistic NEWSIT category by Ebert (2001). According to Ebert (2001), NEWSIT is a category which denotes a new situation that was expected to occur. In her analysis, she mentions the Burmese *pi* and the Mandarin *le* as possibly instantiating this category. The difference between the perfect and NEWSIT is that NEWSIT does not refer to the posttime of the described situation, as it is compatible with states and activities which hold at the reference time. Because of this, in tenseless languages, NEWSIT can give rise to both resultative and 'new situation' readings with activities (Ebert, 2001), as in (30). The predicate 'eat rice' can be conceived as atelic, then NEWSIT refers to the beginning of the activity, or as telic, in which case NEWSIT refers to the completed event. Ebert (2001) calls this property "tense-aspect flip-flop" between two opposite meanings in terms of completion and tense. Although not stated explicitly by Ebert (2001), this case seems to show that predicates like 'eat' in Thai are ambiguous between an activity and an accomplishment reading, and there is nothing in the semantics of NEWSIT that would restrict one of these meanings.

(30) [Thai (Tai-Kadai)]
phom^{4} *kin khau*^{2} ***lɛɛu***^{3}
1SG.M eat rice NEWSIT
'He has eaten' or 'He is eating now.' (Jenny, 2001:127)

Ebert (2001) also compares the meaning of NEWSIT to the aspectual particle 'already', but she establishes that they are different in that NEWSIT has a general meaning of expectedness rather than an implication that the event happened earlier than expected, as in the case of 'already'.[7] Although Ebert's (2001) proposal of NEWSIT has been adopted by Jenny (2001) for Thai in the same edited volume, it has not gained a wider usage in language descriptions and typology. The continuation of work on this category has been taken up under a different name: the iamitive. The work on iamitives as a cross-linguistic category is quite recent and has been comprehensively studied only by Olsson (2013). Olsson's (2013) work was followed by Dahl & Wälchli (2016) who developed a mul-

[7] For this reason, I adopt the term "expectedness" in this work as denoting this general notion of expectedness, which does not necessarily imply the "earlier than expected" reading.

tidimensional scaling map of iamitives. This term seems to have gained a wider usage than NEWSIT and is now used in typology (Gil, 2015), referring to language-specific categories in grammars (e.g. Döhler, 2018; Arnold, 2018), and in relation to other semantic phenomena such as phasal polarity (Veselinova, 2017, 2018), which refers to the aspectual particles studied in Section 4.2.1.

The term "iamitive" was first used in Olsson (2013) and Dahl (2014a), and it is derived from Latin *iam* 'already'. This name intends to capture the 'already' component of meaning of this newly proposed cross-linguistic category. In a simplified fashion it can be described as uniting the resultative meaning of the perfect and the meaning of the aspectual particle 'already' from which it is hypothesized to have developed diachronically (or the verb 'finish') (Dahl, 2014a). The iamitive's proposed core meaning by which it can be distinguished from the perfect is the expression of "the result of a change from the earlier negative state" (Olsson, 2013:17-18), or "a transition to a new scene" (Dahl & Wälchli, 2016). Examples (32)-(34) show sentences with hypothesized iamitive markers in Indonesian, Thai and Mandarin, which Olsson (2013) obtained as an answer to (31) in his Iamitive Questionnaire. The state of 'being rotten' implies an earlier state of 'not rotten' and iamitives were the obligatory choice for this type of meaning in Olsson's (2013) sample of 4-5 languages (Indonesian/Malay, Thai, Vietnamese [vie] and Mandarin Chinese [cmn]). Dahl & Wälchli (2016:328) call these types of predicates "natural development predicates", which are defined as "predicates which become true sooner or later under normal circumstances". On the other hand, the iamitives are not chosen to refer to states which cannot denote this change of state, such as 'be raw'. In English, this meaning of change of state can also be expressed by 'already', but not with perfect (see Section 4.2.1).

(31) You can't eat this one. It BE ROTTEN. (Olsson, 2013:47, IQ 5)

(32) [Jakarta Indonesian]
Kamu tidak bisa memakan-nya. Itu ***sudah*** *busuk.*
2SG NEG can eat-3 it IAM rotten
'You can't eat this one. It is rotten.' (Olsson, 2013:18)

(33) [Thai]
an níi kin mây dâay, man nàw ***lέεw.***
CL this eat NEG can it rotten IAM
'You can't eat this one. It is rotten.' (Olsson, 2013:18)

(34) [Mandarin Chinese]
nǐ bù néng chī zhè-ge. tā làn ***le***
2SG NEG can eat this-CL 3SG rotten IAM
'You can't eat this one. It is rotten.' (Olsson, 2013:18)

Similarly to NEWSIT, iamitives with activities can be interpreted as either the completion or the beginning of the activity, as we have seen in Thai in (30). Olsson (2013) also offers an example from Mwotlap [mlv] (35), an Oceanic language from North Vanuatu.

(35) [Mwotlap]
Ige susu ***may*** *laklak.*
PL small IAM dance
Reading 1: '*Ça y est*, the children have started to dance.'[8]
Reading 2: '*Ça y est*, the children have finished dancing.' (François 2003:118, translation from Olsson 2013:20)

Olsson (2013:19) explains this ambiguity in the following way: "The interaction with predicates lacking a clear inherent end point is more complicated since a iamitive can be interpreted as applying either to the initial boundary, thus yielding an on-going interpretation, or to the final boundary, yielding a completed, "past" interpretation." However, this observation does not provide a semantic explanation of why iamitives behave in this way. If iamitives only denote the beginning of a new situation as proposed by Ebert (2001), the question is why they would allow culminated readings with activities, as in Reading 2 in (35). Moreover, this phenomenon might simply be a result of the underspecification of the lexical aspect (*Aktionsart*), resulting in the ambiguity between accomplishments and activities at the lexical level in certain languages, and it might not be related to the grammatical marking by iamitives at all. This is supported by the fact that all languages studied by Olsson (2013:21), except Indonesian and Mwotlap,[9] require the progressive marker to co-occur with the iamitive for the reading of change-of-state with activities (Reading 1 in (35)) to be felicitous. This means that these languages *do need* to mark the differences in telicity. The only difference in comparison to Indo-European languages is that this happens at the grammatical level – the progressive marking gives rise to atelic meanings and the lack of it to telic ones.

Another property of iamitives is that in combination with prospective or modal markers, iamitives can have readings of "imminent future" or prospective aspect, as shown in (37), as an answer to the question in (36).

(36) (At a birthday party for a child:) Little brother is about to arrive! (So hide the gifts/get ready to scream "surprise!") (Olsson, 2013:48, IQ 28)

(37) [Vietnamese]
Nam ***sắp*** *đến* ***rồi!***
boy PSP come IAM
'Little brother is about to arrive!' (Olsson, 2013:22)

Olsson (2013) argues for another meaning as a part of the iamitive semantics of many languages (Thai, Indonesian and Mwotlap in his sample), namely the notion of speaker's expectation that the described event would happen, similarly to Ebert (2001) for NEWSIT (cf. Section 4.2.1 for deriving the

[8] *Ça y est* is a French idiom which roughly corresponds to 'that's it' or 'there we go', referring either to the beginning or the end of an event, and as such it was a suitable translation of the telic/atelic ambiguity in (35) (François, 2003; Olsson, 2013:20).

[9] Notice that the analysis of Mwotlap needs to be revisited, as it is the only language reported to have both the iamitive and the perfect category (François, 2003; Olsson, 2013), which is, granted iamitives are a typologically valid category which overlaps to a large extent with perfect functions, extremely unlikely from a typological point of view. It is more likely that one of the markers is in fact a category more dissimilar from the perfect, such as 'already'.

earlier than expected implicature of 'already'). He illustrates this with the agrammaticality of using the iamitive in Indonesian and Thai to refer to an unexpected event of 'losing a wallet' (38)-(40).

(38) I LOSE my wallet! Can you help me look for it? (Olsson, 2013:47, IQ 2)

(39) [Jakarta Indonesian]
Aku ***(*sudah)*** *menghilangkan dompet-ku! Bisa-kah kamu membantu mencarikan-nya?*
1SG IAM lose wallet-1 can-Q 2SG help find-3
'I (have) lost my wallet! Can you help me look for it?' (Olsson, 2013:24)

(40) [Thai]
chûay hăa krà păo ŋən nɔ̀y? raw tham krà păo ŋən hăay ***(*lɛ́ɛw).***
help find wallet little 1SG make wallet disappear IAM
'I (have) lost my wallet! Can you help me look for it?' (Olsson, 2013:24)

Olsson (2013:25) also offers a minimal semantic pair from Mwotlap, which shows the difference between marking an expected event (marriage) by a iamitive marker (41a) and a neutral, not necessarily expected, event by a perfect marker (41b). Note that 'already' is used in the English translation of (41a). In Olsson's (2013) study, the feature of expressing expectedness was not attested in Vietnamese, Mandarin, and Malay.

(41) a. *ithi-k* ***may*** *leg.*
brother-1SG IAM married
'My brother is already married, *ça y est.*'

b. *ithi-k* ***me****-leg* *mi* *ni-misis* *vitwag.*
brother-1SG PRF-married with ART-white.woman one
'My brother is married to a European woman (**ça y est*).' (François 2003:123, translation from Olsson 2013:25)

Another pair of properties of iamitives that can be related to the meaning of 'already' are the incompatibility with downward-entailing operators such as 'only' and duality effects in negation. Olsson (2013:33-35) notes that the iamitives in his sample cannot co-occur with the quantifier 'only', as shown in (42) for Mandarin Chinese. As discussed in Section 4.2.1, the meaning of 'only' can be compared to the meaning of *erst* in German, which is also a dual of 'already' and cannot co-occur with it.

(42) [Mandarin Chinese]
Hén hăo, wŏ xiànzài cái kàn-wán sān-běn shū ***(*le)***
not good 1SG so.far only look-finish three-CL book IAM
(How is the reading going so far?) 'Bad, I **only** read three books (so far).' (Olsson, 2013:34)

Regarding the duality effects, Olsson (2013:35-37) argues that when iamitives are negated, they give rise to the meaning of 'no longer'/'not anymore' (43). The expression of 'not yet' is incompatible with iamitives, due to their resemblance with 'already' (cf. duality in Section 4.2.1), and some languages with iamitives even have simplex words for this meaning (44), called *nondums* by Veselinova

(2017). Although *nondums* are not necessarily a property of languages with iamitives, the meaning of 'not yet' is quite often expressed by a *nondum* marker in languages with iamitives.[10]

(43) [Indonesian]

Karena asap menara pengendali ***sudah tidak*** *terlihat lagi.*
because smoke tower controller IAM NEG be.seen again

'Because of the smoke the control tower could **no longer** be seen.' (Sneddon et al. 2010:210, glossing from Olsson 2013:36)

(44) [Indonesian]

Dia ***belum*** *professor.*
3SG not.yet professor

'He is **not** a professor **yet**.' (Sneddon et al. 2010, my glossing)

As we can see from Olsson's (2013) proposal of iamitive properties, they are defined by several 'already'-like meanings and some other meanings including the resultative perfect. These iamitive functions are summarized in Table 4.2. However, Olsson (2013) only discusses a set of iamitive functions, but does not provide a semantic definition of this category. Moreover, although Olsson (2013) focuses on similarities between 'already' and iamitives, it is not clear what the semantic differences between them are, and what the relationship between iamitives and perfects is, except the possibility to express the resultative meaning.

Table 4.2: Iamitive functions, based on Olsson (2013)

'Already'-like meanings	Perfect-like meanings	Other meanings
change of state	resultative	on-going/completed ambiguity
expectedness		immediate future
incompatible with 'only'		
duality with negation		

4.3 Perfect/iamitive debate in Austronesian and Oceanic

In this section I present the debate regarding the cross-linguistic validity of iamitives, and different approaches that have emerged in analyzing perfect/iamitive/'already' categories, especially in Oceanic and Austronesian languages in general. I also briefly present the contribution of this work to the perfect/iamitive debate, which is developed in Chapters 5 and 6.

[10] I hypothesize that the frequency of *nondums* in languages with iamitives emerges due to the following reason. Since iamitives are sometimes the only available category in the language to express past temporal reference and perfect meanings, such as in Indonesian, and they are incompatible with the meaning of 'not yet', the combination of the past/perfect reference and 'not yet' meaning needs to be expressed by a new grammatical from, which can be the simplex *nondum* form.

The category of perfect is ubiquitous in descriptions of Oceanic languages, which suggests that this category is strongly represented in this language family. However, it has been noted by several linguists that the perfect in Oceanic languages does not behave as expected from the semantic theories of perfect, based on the English perfect. In other words, the perfect sometimes has additional functions which are absent in English. For example, this is the case with the marker *naqa* in Toqabaqita (Lichtenberk, 2008) and *ku/xu/u* in Nêlêmwa [nee] (Bril, 2016), where the perfect can express a change of state as shown in (45) and (46), respectively.

(45) [Toqabaqita (Southeast Solomonic)]
Fanua e rodo ***naqa***.
place 3SG.NFUT be.dark PRF
'It is dark now./It has gotten dark.' (Lichtenberk, 2008:712)

(46) [Nêlêmwa (New Caledonia)]
Na ***u*** *hulak.*
1SG PRF old
'I'm old (now).' (lit. 'I have gotten old') (Bril, 2016:79)

This feature of change of state, unusual for "typical" perfects, led to two different ways of analyzing the perfect in languages with this feature. In the typological approach, this meaning was taken as symptomatic of a new typological category of iamitives (Olsson, 2013; Dahl & Wälchli, 2016), described in Section 4.2.2. On the other hand, in formal semantics, it has been argued that the perfect and perfect-like categories instantiate known aspectual categories. I discuss three different approaches in formal semantics which deal with the change-of-state meaning in three Austronesian languages: Tongan (Central Pacific linkage, Polynesia), Niuean (Central Pacific linkage, Polynesia), and Javanese (Western Malayo-Polynesian).[11]

In Tongan, when states are marked with the perfect *kuo*, they can receive all readings associated with the perfect aspect (Koontz-Garboden, 2007:142), as well as the interpretation of change of state (see below). In his analysis of the Tongan perfect, Koontz-Garboden (2007) argues that this change-of-state meaning is derived through aspectual coercion. Aspectual coercion is considered to be an operation by which tenses, aspects, and temporal/aspectual adverbials transform situations of one type of lexical aspect into another (Moens & Steedman, 1988). Moens & Steedman (1988:18) offer the example of *Harry has hummed*, as requiring a scenario in which the "act of humming has a momentousness that it usually lacks". In this case, the perfect aspect coerced a non-culminating event into a culminating event. Aspectual coercion has been proven to be a powerful tool in explaining interactions between grammatical and lexical aspect (see also de Swart, 1998; Michaelis, 2004).[12] Koontz-Garboden (2007) shows that in Tongan the imperfective-marked states (47) differ from the perfect-marked states in that the latter can receive the interpretation of change of state, as in (48).

[11]Outside of the Austronesian family, there is another approach in which the meaning of change of state with the perfect is attributed to the lexical aspect of verbs which are known as "inchoative states", for example in Korean (Choi, 2015), Sḵwx̱wú7mesh (Bar-el, 2005), and Sənčáθən (the Saanich dialect of Straits Salish) (Kiyota, 2008). I address this approach in my analysis of Nafsan in Section 5.2.2.

[12]For opposing opinions arguing against coercion see Ziegeler (2007).

(47) ***ʻOku*** *mokomoko ʻa e loki.*
IPFV cool ABS DEF room
'The room is cool.' (Koontz-Garboden, 2007:129)

(48) CONTEXT: Sione has done the laundry and has a bunch of wet clothes. He hangs them out on the line to dry while they are still wet. He leaves to go do something else and returns after some period of time, finding that they have dried in the interim.
Kuo *mōmoa ʻa e vala.*
PRF dry ABS DEF clothes
'The clothes dried.' (Koontz-Garboden, 2007:133)

The states marked by the imperfective can only be coerced into a change of state meaning by rate adverbs such as *quickly* or *slowly* (49). The same type of coercion by rate adverbs referring to the change-of-state interval is also possible with states in English (50). The only difference between English and Tongan is the fact that the property-denoting concepts (term from Dixon 1982) are verbs in Tongan, while in English they are adjectives. Moreover, Tongan does not posses any derivational morphology to express the meaning of change of state.

(49) ***ʻOku*** *loloa* ***vave*** *ho ʻulu.*
IPFV long fast your hair
'Your hair is quickly getting long.' (Koontz-Garboden, 2007:117)

(50) Kim **quickly** believed Sandy.
'Kim quickly came to believe Sandy.' (Change-of-state reading) (Koontz-Garboden, 2007:147)

Koontz-Garboden (2007) takes these facts as evidence for analyzing the change-of-state meaning with the perfect *kuo* as a result of aspectual coercion. If states marked by the perfect receive the resultative interpretation (as the default reading of perfect), there is an inference that the result state was preceded by a change into it, which is in conflict with the stative meaning of the verb. In order to resolve that conflict, the states are then coerced into changes of state (Koontz-Garboden, 2007:142). In other readings of perfect which are compatible with stative verbs, such as experiential and universal, there is no conflict, and, thus, the meaning of change of state does not arise (Koontz-Garboden, 2007:142), as shown in the experiential and the universal examples in (51) from Tongan.

(51) a. ***Kuo*** *(ʻosi) kulokula tuʻo taha hoku fale.*
PRF ʻosi red occasion one my house
'My house has been red before (not red now).' (Existential)
b. ***Kuo*** *loloa hoku ʻulu, talu pe mei he 1980.*
PRF long my hair since and since DEF 1980
'My hair has been long since 1980 (still long now).' (Universal) (Koontz-Garboden, 2007:142)

The second approach to explaining the appearance of the change-of-state meaning is to integrate this meaning in the semantics of perfect. In Niuean, Matthewson et al. (2015) analyze the marker *kua*, which is diachronically related to the Tongan perfect, as a marker that semantically combines

inchoative and perfect meanings. As we can see in (52), only the states marked by the perfect *kua* receive the interpretation of change of state.

(52) a. *Kula e tau lau akau.*
red ABS PL leaf tree
'The leaves are red.'

b. ***Kua** kula (tei) e tau lau akau*
PRF red (recent) ABS PL leaf tree
'The leaves have turned red.' (Comment: 'It's autumn. Or it could be you're dyeing them.') (Matthewson et al., 2015:15)

Matthewson et al. (2015) adopt Iatridou et al.'s (2001) analysis of perfect which proposes the existence of the Perfect Time Span, which is defined by Matthewson et al. (2015:22) as "an interval whose left boundary is provided by some temporal adverbial, and whose right boundary is provided by tense, and within which an event is placed by the perfect". This analysis aims at capturing the effects of current relevance of the English present perfect (see also, McCoard, 1978). Following this approach, Matthewson et al. (2015) define the Niuean *kua* as placing the change of state within the Perfect Time Span.[13]

In comparison to Tongan, the rate adverbs in Niuean can also coerce states into changes of state (53). However, Matthewson et al. (2015) do not adopt the analysis of aspectual coercion in Niuean because, unlike in Tongan, the perfect cannot have universal and experiential readings with states, as shown in (54). In Koontz-Garboden's (2007) analysis of Tongan, only the resultative perfect triggers aspectual coercion, while the universal and experiential readings of perfect-marked states are perfectly grammatical. In comparison, Matthewson et al.'s (2015) analysis that inchoativity is built in the semantics of *kua* predicts that states are always interpreted as changes of state. This explains the lack of other perfect interpretations with states in Niuean, and also the lack of universal meanings in general.[14] Matthewson et al. (2015) also show that the Niuean perfect cannot be analyzed as a iamitive because it does not have implicatures involving expectedness, and it successfully combines with 'only'.

(53) *Momoho **vave** e tau fua lākau.*
ripe quickly ABS PL fruit plant
'The fruit ripen quickly.' (Matthewson et al., 2015:28)

(54) a. ****Kua** loa e ulu haaku tali mai he tau 1980.*
PRF long ABS hair 1SG.POSS since from LOC year 1980
'My hair has been long since 1980.'

[13] A similar reanalysis of perfect as inchoative aspect has also been adopted for the Samoan *'ua* by Hohaus (2017). This approach is not discussed in this work because Hohaus (2017) does not discuss the full distribution of *'ua* in relation to the functions of the perfect aspect.

[14] The universal perfect readings can only arise with homogeneous predicates, and these are states and progressives in English. Since the change of state is non-homogeneous, this predicts the impossibility of the inchoative perfect in Niuean receiving universal readings (Matthewson et al., 2015:25).

b. ***Kua** *kula tei e fale haaku he vaha tuai.*
PRF red PRF ABS house 1SG.POSS LOC time old
'My house has been red before (not red now).' (Matthewson et al., 2015:29)

The third approach to analyzing the change-of-state meanings is to adopt the semantic analysis of 'already'. This has been done by Vander Klok & Matthewson (2015) for the Javanese *wis* (Paciran Javanese *wes*), which has also been analyzed as iamitive by Dahl & Wälchli (2016). Since 'already' and the perfect can easily occur in similar environments (Vander Klok & Matthewson, 2015:179), Vander Klok & Matthewson (2015) establish three features that can distinguish 'already' from the perfect: having the change-of-state meaning with states (55), presence of duality with negation (56), and presence of the "earlier than expected" implicature (57). Since *wes* shares these three properties with the English 'already', Vander Klok & Matthewson (2015) analyze it as having the semantics of 'already' as proposed by Krifka (2000) (see Section 4.2.1).

(55) [Change of state]
Context: 'I haven't seen Kana in one year. When I left before, she was still short.'
Kana (sa'iki) kok ***wes*** *gedhe / dhuwur!*
Kana now PRT already big / tall
'Kana is already big now!' (Vander Klok & Matthewson, 2015:189)

(56) [Duality]
Mas Mawon ***wes*** *gak ndandan-i jareng-e.*
Mr. Mawon already NEG AV.fix-APPL fishing.net-DEF
'Mawon is no longer fixing the fishing net.' (Vander Klok & Matthewson, 2015:185)

(57) [Earlier than expected]
Mbok ***wes*** *jam setengah wolu ndak-an engko kari reng pasar.*
grandmother already hour half eight to-an later left.behind at market
'Grandmother, it's already 7:30 a.m. so there won't be anything at the market soon.' (Vander Klok & Matthewson, 2015:187)

Vander Klok & Matthewson (2015) also consider the co-occurrence with past temporal adverbs as a possible way to distinguish the meaning of 'already' from the perfect aspect. The Javanese *wes* can combine with past temporal adverbs (58), which can be interpreted as evidence against analyzing it as perfect. However, Vander Klok & Matthewson (2015) assume that in tenseless languages the restriction on the co-occurrence with past temporal adverbs does not hold. They derive this assumption by following Giorgi & Pianesi (1997) who propose that whenever the present tense is not syntactically realized in the language, the perfect allows the co-occurrence with past adverbials. In Section 5.2.1 I contest this view by showing that the Nafsan perfect has restrictions on past temporal adverbs despite the lack of tense in Nafsan.

(58) [Temporal adverbs]
Gek ***ngi*** *aku* ***wes*** *ngomong... sik pak Arif iku loh.*
just yesterday 1SG already AV.speak Mr. Mr. Arif DEM PRT
'Yesterday I already spoke to Mr. Arif.' (Vander Klok & Matthewson, 2015:192)

Vander Klok & Matthewson (2015) additionally argue against the necessity to postulate the new iamitive category and suggest instead that the properties analyzed as belonging to the iamitive semantics can be explained by adopting the semantic analysis of 'already', as described in Section 4.2.1. Moreover, they criticize the lack of precise semantic comparison between the postulated iamitive category and the perfect in Olsson (2013). As Vander Klok & Matthewson (2015) note, in order to discuss the cross-linguistic validity of iamitives, we would also need to know if iamitives share any of the restrictions of perfect aspect, such as incompatibility of the present perfect and past temporal adverbs (see Section 4.1).

Following these different perspectives on the perfect, iamitives, and 'already' in Oceanic languages, the Nafsan perfect lends itself as a good case study, particularly because it can co-occur with temporal adverbials in certain contexts, it can encode a change of state with stative verbs, has some duality effects, and it lacks one of the readings of the English perfect. In the semantic analysis of the perfect in Nafsan presented in this thesis, I show that all the functions of the perfect, including the "unexpected" ones, can be derived from Klein's (1994) definition of perfect as placing the Topic Time (TT) in the posttime of the Situation Time (TSit), discussed in Section 4.1. I analyze all the attested functions of perfect in Nafsan and show how their meanings are derived. By analyzing the processes through which certain "unexpected" meanings are derived, in Chapter 5 I argue for five main generalizations regarding the nature of the perfect:

1. The present perfect is incompatible with past temporal adverbials.[15] If the perfect can occur with temporal adverbials in a tenseless language, this might be due to its reinterpretation as the past or future perfect. In this case, the temporal adverbial is interpreted as being in TSit instead of TT (see Section 5.2.1).

2. In languages without any dedicated morphology for the expression of change of state, this meaning can be achieved through aspectual coercion of states marked by perfect (cf. Koontz-Garboden, 2005, 2007) (see Section 5.2.2).

3. Duality in negation does not necessarily arise from the meaning of aspectual particles like 'already' (Löbner, 1989). It can arise from two other mechanisms: as a consequence of aspectual coercion of states into changes of state marked by the perfect, and because of morphosyntactic restrictions on co-occurrence of some TMA markers (see Section 5.2.3).

4. One of the reasons for creating the new iamitive category has to do with the fact that many languages said to have iamitives do not express all the "expected" functions of perfect.[16] I show that the distribution of functions of one grammatical marker depends on other elements

[15] As mentioned in Chapter 1, in this work I treat the perfect category as having the properties of the prototype of the English perfect and I exclude languages which happen to have a category called "perfect" for historical reasons, which in fact behaves as past tense, e.g. German, French, Italian, Portuguese, etc.

[16] For instance, Indonesian and Mandarin Chinese do not express the experiential meaning of perfect with the iamitive marker, because they have dedicated experiential markers (Olsson, 2013). Since for Dahl & Velupillai (2013b) the experiential meaning is one of the core functions of perfect, a new category needed to be designed in order to explain a cluster of functions similar to perfect, but which excludes some of the "core" functions.

of the TMA paradigm. If the perfect does not have all the cross-linguistically attested functions, this is because there are other markers in the paradigm specialized for those meanings (e.g. experiential in languages studied by Olsson (2013) and 'hot news' in Nafsan), see Section 5.3.1.

5. We need to make a distinction between *having* certain meanings and *being compatible* with certain meanings. Based on the case of the Nafsan perfective marker, I show that a given aspectual marker can co-occur with many perfect functions, due to their semantic compatibility. However, this does not mean that the same marker necessarily denotes these perfect functions as a part of its semantic definition. Thus, the aspectual markers analyzed as iamitives might in fact be simply compatible with certain meanings of perfect or 'already', while their core meanings belong either to the perfect, 'already', or some other aspectual category.

Finally, these five points are taken to show the importance of language-internal and system-dependent factors that govern how a specific TMA category will be expressed.[17] This speaks against the category of iamitives, which neglects complex language-internal interactions between semantics, pragmatics, and syntax. In contrast to iamitives, I argue that the perfect as a category that places the TT in the posttime of the TSit is a good candidate for a typologically valid category, whose cross-linguistic differences can be explained by different processes operating in individual language systems, without the need to posit different semantic definitions of the perfect, which would distinguish iamitives as a new kind of perfect.

[17]In typology, the fact that the criteria of category assignment are often different from language to language due to language-internal properties is called "categorial particularism" (Haspelmath, 2010).

Chapter 5

Perfect in Nafsan

As shown in Chapter 4, the debate about the status of the perfect aspect as a cross-linguistic category has resulted in proposing a number of features expected of perfects, as well as proposing a new typological category of iamitives intended to explain the additional function of change of state. However, as foreshadowed in Chapter 4, Nafsan may speak against some of these proposals, including the existence of the iamitive as a typological category. In this chapter, I discuss this in more detail by analyzing the fine-grained semantic meanings expressed by the perfect marker *pe* in Nafsan and relating them to the relevant debates regarding the perfect aspect and iamitives.

5.1 Setting the stage for the analysis of perfect in Nafsan

5.1.1 Subject proclitics and perfect

In this section I describe the distribution of "perfect" proclitics and argue that they should be reanalyzed as perfect-agreeing proclitics which do not carry any perfect semantics as they only formally agree with the perfect marker *pe*.

As shown in Section 2.3.1, Thieberger (2006) labels as perfect two elements in the TMA system of Nafsan: one paradigm of subject proclitics (see Table 5.1) and the marker *pe*. Thieberger (2006) shows that they typically co-occur (1), and he proposes that they have the same meaning of perfect aspect. I formulate that proposal as the SP_Hypothesis 0.[1]

(1) *ru=lap te-pur* ***rui=pe*** *mat.*
3PL=many DET-big 3PL.PRF=PRF dead
'And very many have died.' (Thieberger, 2006:110)

SP_Hypothesis 0: The perfect subject proclitics have the same meaning as the perfect marker *pe*.

The second possibility is that the perfect subject proclitics and the marker *pe* have different distributions, which means that they do not always co-occur. In this case we can formulate the

[1] SP refers to "subject proclitic".

Table 5.1: Subject proclitics in Nafsan based on Thieberger (2006:150)

	General	Irrealis	Perfect-agreeing
1SG	*a=*	*ka=*	*kai=*
2SG	*ku=*	*p̃a=*	*kui=*
3SG	*i=*	*ke=*	*ki=*
1DU.INCL	*ta=*	*tak=*	*takai=, tai=*
1DU.EXCL	*ra=*	*rak=*	*rakai=*
2DU	*ra=*	*rak=*	*rakai=*
3DU	*ra=*	*rak=*	*rakai=, rai=*
1PL.INCL	*tu=*	*tuk=*	*tu=, tui=, tukoi=*
1PL.EXCL	*u=*	*ko=*	*ui=, koi=*
2PL	*u=*	*ko=*	*koi=*
3PL	*ru=*	*ruk=*	*rui=, rukui=, rukoi=*

SP_Hypothesis 1 which says that they simply overlap in certain meanings.

SP_Hypothesis 1: The perfect subject proclitics have a meaning which overlaps with the meaning of *pe* in certain contexts.

In terms of the distribution of the perfect proclitics and the marker *pe*, judging from Thieberger's (2006) description, we can see that besides their co-occurrence there are also cases in which the perfect subject proclitics occur without *pe*, as shown in (2) with the subject proclitic *rakai*. As explained below, when subject proclitics occur alone they do not denote any perfect meanings. This is also visible from (2), in which the proclitics are used in a narrative context, incompatible with the perfect aspect (see below discussion around example (9)). Thus, we can conclude that only SP_Hypothesis 1 is tenable.

(2) *Kaltog i=kel ntak Selwin tefla=n go* ***rakai=ler*** *mai pak e-sum̃.*
Kaltog 3SG=hold back Selwin thus=DST and 3DU.PRF=return come to LOC-house
'Kaltog rubbed Selwin's back like that and they returned to the house.' (Thieberger, 2006:111)

In order to test the SP_Hypothesis 1 and find out what meanings can be assigned to the perfect proclitics, I first analyzed the distribution of co-occurrences of *pe* with subject proclitics. I analyzed three different sources of Nafsan data: corpus data, storyboards/dialogs, and questionnaires (see Section 3.3 for details). Table 5.2 lists the number of all occurrences of *pe* with subject proclitics. My first finding is that *pe* felicitously occurs with the general subject proclitics in any context. In other words, *pe* can occur in the same contexts with both the general and the perfect subject proclitics. Examples (3) and (4) show the experiential and anteriority readings of perfect from Dahl's (2000c) questionnaires for which speakers accepted/offered both the general and the perfect subject proclitic

Table 5.2: Occurrence of perfect subject proclitics and *pe* in 3 empirical methods

Method	SBJ.PRF without *pe*	SBJ.PRF=*pe*	*pe* with general SBJ.PRO
Corpus	159	152	7
Storyboards/Dialogs	10	271	55
Questionnaires	4	209	31

in elicitation. Example (5) is from a storyboard and in this case the speaker produced the same sentence with the resultative meaning once with the perfect proclitic and second time with the general proclitic. The meaning of change of state in the last sentence in (5), characteristic for the Nafsan perfect, is also expressed by the general proclitic in combination with *pe*.

(3) [Experiential perfect]

ag ***kui=pe/ku=pe*** *paatlas kor-e-k te mal ko?*
2SG 1SG.PRF=PRF/1SG=PRF meet sister-V-1SG.DP some time or
'Have you met my sister (at any time in your life up to now)?' (AK1-120-01, based on Dahl 2000c:PQ 35)

(4) [Anteriority]

Malnen p̃a=ler, ***kai=pe/a=pe*** *mtir natus su.*
when 2SG.IRR=return 1SG.PRF=PRF/1SG=PRF write letter PFV
'When you come back, I will have finished writing the letter.' (AK1-083-01, based on Dahl 2000b:FQ 17)

(5) [Resultative perfect, change of state]

"Mama, ***kai=pe*** *preg siilu nawesien,* ***a=pe*** *preg siilu nawesien neu." Ale*
mom 1SG.PRF=PRF make every chore 1SG=PRF make every chore 1SG.POSS then
Mama ga i=na: "Malfane go ***ku=pe*** *tae taf, p̃a=fan mes."*
mom 3SG.POSS 3SG=say now and 2SG=PRF can go.out 2SG.IRR=go.IRR play
'Mom, I have done all the chores, I have done all the chores. Then her mom said: "You can go out now, go play!" '(AK1-034-01, 00:01:55.610-00:02:13.171, from the storyboard "Chore girl" (TFS, 2011a))

My second finding is that *pe* cannot combine with the irrealis subject proclitics. However, I have encountered the form *fe* which can be analyzed as the irrealis stem-mutation of *pe*. Unfortunately, despite various elicitations in questionnaires and storyboards, this form has been attested only in one context explained below, which makes it hard to understand its meaning and the semantic relation to *pe*. The only context in which I have recorded *fe* is the immediate future typically translated as 'going to' or 'about to' (6).[2] Although we can easily assume that this is *fe*'s sole function, its use still seems marginal because immediate future can also be expressed by using the irrealis form alone

[2]Because of the low frequency and restricted use of *fe* and its unclear status in relation to *pe* I also cannot offer a conclusion about whether it presents any new evidence regarding the proposed iamitive feature of immediate future.

(7).[3] In example (6) we can see that both *pe*, attached to a perfect proclitic and followed by an irrealis complement clause, and *fe*, attached to the irrealis proclitic, can be used in the context of immediate future (see also Section 5.2.2). The form *fe* cannot be used with the meaning of future perfect (see recording AK1-156), which is the only irrealis context in which the perfect *pe* regularly occurs (see Section 5.2.1).

(6) [I BE ABOUT to fall asleep.] (Dahl, 2000b:FQ 85)
Ka=fe *matur./* ***Kai=pe*** *to na* ***ka****=matur.*
1SG.PRF=PRF.IRR sleep/ 1SG.PRF=PRF PROG COMP 1SG.IRR=sleep
'I'm going to sleep now.' [speaker's translation] (AK1-109-01, 00:03:17.991-00:03:20.388)

(7) [Talking about the speaker's immediate plans:] I GO to town. (Dahl, 2000b:FQ 37)
Ka*=fak* *taon.*
1SG.IRR=go.IRR town:BI
'I'm going to town./I'm about to go to town.' (AK1-086-01)

My third finding is that in my fieldwork data the occurrence of the perfect subject proclitics without *pe* is highly dispreferred, except for *ki*= 3SG.PRF which accounts for all 10 occurrences of SBJ.PRF without *pe* in the storyboard data shown in Table 5.2. The occurrence of *ki*= alone is illustrated in example (8). The 4 instances counted in the questionnaire data include forms other than *ki*= 3SG.PRF because I asked about them in elicitation.

(8) *Yokon i=pak namlas, ru=to rik go Ros* ***ki****=mer taus-i-ø pa.*
Yokon 3SG=go.to bush 3PL=PROG wait and Rose 3SG.PRF=also follow-TR-3SG.OBJ go
'Yokon went to the bush, they waited and Rose went after her.' (AK1-027-01, 00:11:20.431-00:11:25.116)

When eliciting the paradigm of perfect proclitics, speakers said that using the perfect subject proclitics alone sounded like "old language", but did not judge it as completely agrammatical (see recording AK1-045-01). In the same elicitation session speakers judged the perfect proclitics as being short versions of the forms including the perfect proclitics and *pe*. This indicates that nowadays the perfect proclitics are only seen as a part of the perfect *form*, as they do not typically stand alone anymore. This type of presumably diachronic change might be similar to the processes underlying the formation of portmanteau subject morphemes – the subject markers and a TMA marker co-occur until they gradually become dependent on each other and merge morphologically, forming a portmanteau morpheme. However, since speakers still do not reject the perfect subject proclitics occurring alone on grounds of agrammaticality, this means that we are witnessing a grammatical change. If we look again at Table 5.2, it is quite surprising to see such different values between the corpus data and my fieldwork data. In the corpus data, the perfect subject proclitic occurred *more* times without than with *pe*, which is drastically different from only 10 occurrences of SBJ.PRF alone (all in 3SG) in storyboards.[4] The fact that these different types of data show evidence of a diachronic change in progress

[3] See discussion about how irrealis marking alone gets this interpretation in Section 8.3.2.

[4] One caveat to this is the fact there are some differences in the glossing of the corpus and my fieldwork data, which

can be partially explained if we consider the following facts. All participants in my fieldwork were between 26 and 50 years old in 2017 and 2018, and the corpora from Thieberger (1995–2018) were recorded from 1995 to 2018 with most of the data having been recorded in the 90s and early 2000s. The corpus recordings include large numbers of older speakers who told traditional *kastom* stories. Thus, the age difference and the language used in the telling of traditional stories, as opposed to the storyboards and questionnaires referring to everyday life, might be factors that led to such stark differences in the usage of the perfect subject proclitics. I also compared this situation to the subject proclitics in the Nafsan Bible translation of Genesis from the 19th century, translated by Rev. J.Cosh in 1874 and collected by Thieberger (1864), and I found that the perfect proclitics were almost as frequent as the general ones and were largely used in the same environments as the general proclitics. The diachronic hypothesis would be that the originally more widespread perfect proclitics[5] started to be restricted to the combinations with the perfect marker *pe* in the synchronic system.

The next question we need to ask is what kind of meaning do the perfect subject proclitics have in the attested cases listed in Table 5.2. More importantly, the question is whether we can observe the same functions as with *pe*. The answer to this is negative. While *pe* has perfect functions (see Section 5.2), the perfect proclitics do not, because they appear in contexts in which the perfect *pe* is not grammatical. For instance, the perfect proclitics appear in sequences of events as in (2), (8) and (9), and with past temporal adverbials (10), both of which are infelicitous contexts for the perfect *pe*. The perfect cannot occur in sequences because they denote progression of events (each posterior to each other), and the perfect denotes anteriority (see also Lindstedt, 2000). In the case of past temporal adverbials, the perfect *pe* can only co-occur with them if reinterpreted as past perfect (11) (see Section 5.2.1).

(9) *selwan* ***ki=(*pe)****ler* *tok* *e-tog* *mai* ***ki=(*pe)****preg* *nsaiseiwen*
while 3SG.PRF=(*PRF)return stay LOC-foreign.place come 3SG.PRF=(*PRF)make meeting
p̃ur i=skei *go* ***ki=(*pe)****til-i-ø* *nag [...]*
big 3SG=one and 3SG.PRF=(*PRF)say-TS-3SG.OBJ that
'When he came back from abroad he called a big meeting and he told them [...]' (026.012)

(10) [Question: When Columbus ARRIVE at America for the first time?] Answer: He ARRIVE at America in 1492. Dahl (2000c:PQ 25)
Columbus ***ki=(*pe)****taasak* *America ntau ni 1492.*
Columbus 3SG.PRF=(*PRF)come.ashore America year of 1492
'He arrived in America in 1492.' (AK1-120-01)

might have slightly increased the number of subject proclitics occurring alone in the corpus. With verbs of saying it is common to use the expression *kin na*, following the verb. For instance, in my data I gloss *nrik-i-n* ***kin na*** as 'say-TS-3SG.OBJ **COMP COMP**', while in the corpus some cases were glossed like this and others as *nrik-i-n ki=na* 'say-TS-3SG.OBJ **3SG.PRF=say**', analyzing *ki* as 3SG.PRF and *na* as the verb 'to say'. Regardless of which approach is in fact correct, *ki(n)na* is a conventionalized construction that appears only with verbs of saying and cannot be regarded as a case of productive use of the subject pronoun. Apart from this issue of glossing, even the productive use of 3SG.PRF= in the corpus is the highest with verbs of speaking, which might be some kind of idiomatic retention.

[5]The semantics of these "widespread perfect proclitics" in Bible translations must have been much more underspecified than referring to perfect aspect. It is unclear at this point what TMA values, if any, were expressed by perfect proclitics.

(11) [A says: I think Columbus came to America in the 1700s.] B says: No, Columbus had already come in 1492.

Columbus ***ki=pe*** *pan taasak-wes* *1492.*
Columbus 3SG.PRF=PRF go come.ashore-3SG.OBL 1492

'Columbus had arrived in America in 1492.' (AK1-120-01)

This comparison of the functions of *pe* and the "perfect" proclitics in the attested occurrences is sufficient to show that these proclitics do not denote perfect aspect. Since they have very restricted usage in Nafsan nowadays, we also cannot ascertain with confidence if any another grammatical functions might have been associated with these proclitics in the past. The analysis of the perfect proclitics in the corpus data also does not show any characteristics of known TMA categories. The only conclusion that can be taken from the corpus data is that the perfect proclitics occur more frequently with certain lexemes, such as verbs that mean 'to say'. However, these preferences do not seem to indicate a choice based on TMA values. For these reasons, the best synchronic label for the perfect proclitics is "perfect-agreeing" proclitics, which means that they are simply subject markers which agree with *pe* only in form. This analysis captures their tendency to co-occur with the perfect *pe* (see Table 5.2), but it does not say anything about their semantic contribution.[6] We can conclude that the SP_Hypothesis 1 was neither confirmed nor disproved, as the newly collected Nafsan data could not provide insights into the meaning of the perfect-agreeing proclitics, but it did confirm a higher degree of co-occurrence of the perfect-agreeing proclitics with *pe*, in comparison to the general proclitics and *pe*. Thus, from now on, when talking about the Nafsan perfect, I refer exclusively to the marker *pe*.

5.1.2 Challenges for the description of *pe*

In this section I discuss the challenges for the perfect analysis of *pe* found in the previous work on perfect in Nafsan (Thieberger, 2006), as well as the data from the Dahl questionnaire elicited by Thieberger (2006) and the corpus of Nafsan (Thieberger, 1995–2018). There are many instances of uses of the Nafsan perfect that do not correspond to the definition of perfect aspect. Some of these instances are analyzed here and alternative analyses are suggested in the form of hypotheses. Some of these hypotheses are then tested and disproved, and others are analyzed in Section 5.2.

As the initial hypothesis I take Thieberger's (2006) labeling of the category in question as perfect.

P_Hypothesis 0. The marker *pe* has the meaning of perfect, as described in Section 4.1.[7]

Perfect aspect is defined by a range of functions, such as expressing resultative, experiential, or anteriority meanings, which can be analyzed as placing the TT in the posttime of the event described

[6] By saying that the proclitics agree with *pe* in form, I do not wish to propose any specific analysis of how this agreement takes place. Possible theoretical accounts could rely on different syntactic frameworks, for instance by using the generative operation of *Agree* (e.g. Zeijlstra, 2012) or even on the construction-based approach from Construction Grammar (e.g. Croft, 2001).

[7] P in "P_Hypothesis" refers to "perfect".

by the verb (Klein, 1994). Thus, if *pe* in Nafsan is a true perfect it should have most, if not all, of the following functions: resultative, experiential, universal, 'hot news', and anteriority referring to past and future perfect readings (see Section 4.1).

When it comes to the resultative meaning, Thieberger (2006) describes the perfect in Nafsan as denoting resultative meanings with dynamic verbs (12) and states (13). However, the resultative meaning with states, as in (13), receives an interpretation of change of state which is not something that would be expected from an English-style perfect.

(12) *Nlaken nasum̃ **rui=pe** maui saprek.*
because house 3PL.PRF=PRF all discard
'Because the houses, they have broken all of them.' (Thieberger, 2006:168)

(13) *Me famle neu **rui=pe** tar taos ag. Ga i=mer ta slat nask-o-k*
but family:BI 1SG.POSS 3PL.PRF=PRF white like 2SG 3SG 3SG=in.turn NEG1 take skin-V-1SG.DP
*mau, **rui=pe** tar∼tar.*
NEG2 3PL.PRF=PRF white∼white
'But my family became white like you. It [the family] didn't get my skin, they are really white.' (Thieberger, 2006:168)

If we hypothesize that the meaning of change of state is the defining core meaning of *pe*, we can posit the first hypothesis:

P_Hypothesis 1. The perfect *pe* can be reanalyzed as a change-of-state marker.

Although change of state can be analyzed as a property of lexical aspect, in some languages this meaning has been analyzed as the main function of certain grammatical markers, such as *le* in Mandarin Chinese (Soh, 2009) or *bwet* in Daakaka (Central Vanuatu) (von Prince, 2015). This analysis would also be similar to what Matthewson et al. (2015) call an inchoative marker in Niuean (Central Pacific linkage). Another possible analysis of resultative and change-of-state meanings, as in (12) and (13), is to reanalyze the perfect *pe* as a iamitive marker.

P_Hypothesis 2. The perfect *pe* can be reanalyzed as a iamitive marker.

As shown in Section 4.2.2, Olsson (2013) proposes that iamitives are a new typological category that encompasses the resultative perfect meanings and the meanings of 'already'. For instance, the above mentioned Mandarin *le* has also been analyzed as iamitive by Olsson (2013). Thus, the change-of-state meaning would be the main indicator of this category in Nafsan. Another problem that could be solved by adopting either the P_Hypothesis 1 or 2 is the occurrence of perfect in sequences, as illustrated with the corpus example (14). The perfect is not expected to appear in sequences of events, because it would give rise to an interpretation of anteriority in relation to the previously mentioned event (Lindstedt, 2000). On the other hand, if the function of *pe* is analyzed as marking changes of state, then this interpretation would be compatible with sequences of events.

(14) *I=taulu iak neu go* ***ki=pe*** *to san to.*
3SG.REAL=marry mother 1SG.POSS and 3SG.PRF=PRF stay there at
'He married my mother and he stayed here.' (061.016)

For his work on the Nafsan grammar, Thieberger (2006) also conducted the Dahl (1985) questionnaire on TMA categories. There are several examples which show that perfect can have readings of anteriority, as in (15) with a future reference. This reading of anteriority of the Nafsan perfect behaves just like the past and future perfect in English. There are also examples from the Dahl (1985) questionnaire where the temporal reference is clearly indicated by temporal adverbials as in (16), which is possible in English only with the past and future perfect, and not with the present perfect.

(15) [Talking to someone who is leaving in a while] When you RETURN, I WRITE this letter (=I FINISH it already at that time) (Dahl, 1985:TMAQ 107)
malnen p̃a=ler mai me ***kai=pe*** *mtir leta su*
as 2SG.IRR=return come and 1SG.PRF=PRF write letter PFV
'When you return I will have written this letter.' (Thieberger, 2012:392)

(16) My brother SAY (yesterday) that the water BE COLD (the day before yesterday, but I think he was wrong) (Dahl, 1985:TMAQ113)
p̃al-u-k i=tl-i-ø nanom na nai ***ki=pe*** *mlanr*
brother-V-1SG.DP 3SG=say-TS-3SG.OBJ yesterday COMP water 3SG.PRF=PRF cold
nas
day.before.yesterday
'My brother said yesterday that the water was cold the day before yesterday.' (Thieberger, 2006)

Since the present perfect should not be able to combine with past temporal adverbials, the fact that the Nafsan perfect does combine with them, as in (16), suggests that the basic meaning of the Nafsan perfect could be the meaning of anteriority, which is in some accounts analyzed as relative tense (Bohnemeyer, 2014). Taking this in consideration, I formulate P_Hypothesis 3.

P_Hypothesis 3. The perfect *pe* can be reanalyzed as a marker of anteriority.

There are also several examples from Dahl's (1985) questionnaire which target the meaning of 'already', implying that the event happened earlier than expected (see Section 4.2.1). In many elicited sentences with this meaning, as in (17), *pe* is used in Nafsan. Thus, we can posit P_Hypothesis 4, which says that *pe* could have a meaning equivalent to 'already'.

(17) [The speaker has just seen the king arrive (earlier than was expected):] The king ARRIVE already (Dahl, 1985:TMAQ 153)
naot ***ki=pe*** *mai su*
chief 3SG.PRF=PRF come PFV
'The king has already arrived.' (Thieberger, 2006)

P_Hypothesis 4. The perfect *pe* can be reanalyzed as 'already'.

In order to test these hypotheses, we need to go back to more fine-grained functions and effects that can be associated with each hypothesized category. In our P_Hypotheses 0 to 4, there are some complex categories which refer to a cluster of functions and some simpler categories which correspond to smaller units of meaning. The complex categories are the perfect, iamitives, and 'already' and the two simple categories are the change of state and anteriority. (18)-(20) list the main functions and semantic/pragmatic effects found in the perfect, iamitives, and 'already' (see Section 4.2). These functions are represented in Table 5.3 together with their occurrences in different empirical methods used in this work. Note that "Temp. adv." refers to the co-occurrence of temporal adverbs with the perfect.

(18) Perfect: resultative (Result.), anteriority (Ant.), experiential (Exper.), universal (Univer.), restrictions on past temporal adverbs with present perfect (Temp. adv.)

(19) Iamitive: expectedness (Expected), duality (Dual.), change of state (CoS), resultative (Result.), compatible with temporal adverbs (Temp. adv.)

(20) 'Already': expectedness (Expected), duality (Dual.), change of state (CoS), compatible with temporal adverbs (Temp. adv.)

Table 5.3: Occurrence of different functions of *pe* in 3 empirical methods (+ attested, ? unclear, - not attested, -/+ restricted to certain environments, perfect=light gray, iamitive/perfect=middle gray, iamitive/'already'=dark gray)

Method	Univer.	Exper.	Ant.	Result.	Temp. adv.	CoS	Dual.	Expected
Corpus	?	?	+	+	+	+	?	?
Storyboards	+	+	+	+	-/+	-/+	-/+	-/+
Questionnaires	+	+	+	+	-/+	-/+	-/+	-/+

Judging from the distribution of the attested functions in Table 5.3, the analyses according to which the basic function of *pe* would be only anteriority (P_Hypothesis 3) or only change of state (P_Hypothesis 1) do not seem to hold. While in the corpus data there was still a lot of uncertainty about possible readings of *pe*, marked with "?" in Table 5.3, the storyboard and questionnaire data either confirmed the existence of these functions of perfect/iamitive/'already', or they explained semantic/pragmatic restrictions on their occurrence. Thus, the marker *pe* can express quite a number of different functions, such as experiential and universal, which are not reducible to the meaning of either anteriority or change of state.

Thus, the hypotheses that are left to be discussed are the hypotheses about *pe* being the perfect (P_Hypothesis 0), iamitive (P_Hypothesis 2), and 'already' (P_Hypothesis 4). In Section 5.2.1 I argue for the analysis of *pe* as perfect aspect and I address the other two hypotheses, by discussing the results presented in Table 5.3 in more detail.

5.2 The semantics of perfect in Nafsan

This section studies the semantics of the marker *pe* as a marker of perfect aspect. Each subsection describes one or several major functions of the Nafsan perfect aspect, and directly compares them either to the theory of the English perfect or to the proposals for the iamitive and 'already' categories. A shorter and a predated version of this section was published in Krajinović (2019).

5.2.1 Past, present, and future perfect meanings

In this section I analyze the functions of the perfect in Nafsan which are equivalent to the functions of past, present, and future perfect in English. These functions are resultative, experiential, and universal perfect, as well as the presence of adverbial restrictions and anteriority readings.

The resultative function of the perfect was tested with the storyboard "Making laplap" (Krajinović, 2018c). This story is about two friends who are preparing laplap, Vanuatu's national dish. One of the steps of the cooking process shown in the storyboard is the grating of the taro. One of the friends finishes grating the taro and produces the sentence in (21). For this targeted sentence 6 out of 6 consulted speakers produced the perfect *pe* with the verb.

(21) *Kineu* ***kai=pe*** *maa ntal su.*
1SG 1SG.PRF=PRF grate taro PFV
'I have grated the taro.' (AK1-146-02, 00:02:32.335-00:02:41.410)

As we can see, the process leading up to the completion of grating the taro in the story ensures that a resultative reading is unambiguously intended. Interestingly, when there is no indication of a clear preceding cause of the event, the perfect marking is optional. We can confirm this with an example from the storyboard "Miss Smith's bad day" (Matthewson, 2014). In this storyboard, Miss Smith tries to teach her class but gets continuously interrupted by her students. At one point, one student tells her that Bob has fallen asleep, as in (22). In this context, there is no clear cause or a process leading up to Bob falling asleep. This means that the speaker can choose whether they want to express that "Bob falling asleep" is a resultative state or not. This is confirmed in the Nafsan data, where only 1 out of 5 speakers used the perfect in this context and others resorted to the general marking on the verb (23). Since *matur* in Nafsan means 'to sleep/to be asleep', example (22) can be interpreted as involving a change of state. In Section 5.2.2 I analyze the relationship between the resultative perfect and the meaning of change of state.

(22) *Bob* ***ki=pe*** *matur.*
Bob 3SG.PRF=PRF sleep
'Bob has fallen asleep.' (AK1-146-04, 00:03:25.753-00:03:30.766)

(23) *Miss Smith, Bob* ***i=****matur.*
Miss Smith Bob 3SG=sleep
'Miss Smith, Bob is asleep.' (AK1-147-04, 00:02:17.878-00:02:20.450)

Another property of the Nafsan perfect is that it requires an interpretation of completion with dy-

namic predicates, just as demonstrated with the English example *Harry has hummed* by Moens & Steedman (1988:18), mentioned in Section 4.3. For instance, the semelfactive 'to knock' which is typically interpreted as iterative due to its instantaneous nature (Smith, 1997), is in fact interpreted as a single knock with the perfect marking alone, as in (24).

(24) ***Ki=pe*** *tum̃otum̃ su.*
1SG.PRF=PRF knock PFV
'He has knocked (once).' (Lionel Emil, 08/02/2019)

The second function discussed here is the experiential function of the perfect. In the storyboard "Miss Smith's bad day" this meaning is targeted by Miss Smith asking a question in (25) and a student's answer in (26). Perfect was used in both sentences by 5 out of 5 speakers. The analysis that experiential meanings are a function of perfect is supported by the fact that speakers judge sentences without perfect unacceptable when the experiential reading is intended (cf. recording AK1-123-01).

(25) *Fei kin* ***ki=pe*** *pag-ki ntaaf?*
who COMP 3SG.PRF=PRF climb-TR mountain
'Who has ever climbed a mountain?' (AK1-147-04, 00:00:48.786-00:00:50.800)

(26) *Kineu* ***kai=pe*** *pag-ki ntaf i=skei su.*
1SG 1SG.PRF=PRF climb-TR mountain 3SG=one PFV
'I have climbed a mountain.' (AK1-147-04, 00:00:57.590-00:01:01.796)

Experiential readings are also possible with stative verbs. In (27) the state of being red[8] receives an experiential reading.

(27) *Nasum̃ neu* ***ki=pe*** *pei miel, me* ***ki=pe*** *tap miel malfanen mau.*
house 1SG.POSS 3SG.PRF=PRF first red but 3SG.PRF=PRF NEG1 red now NEG2
'My house has been red before, but it's not red anymore.' (Lionel Emil, 04/02/2018, based on Koontz-Garboden 2007:142)

Universal readings of perfect in Nafsan were targeted in the storyboard "Haircuts" (Krajinović, 2018b). In this storyboard two friends who have not seen each other in a long time meet and comment on their haircuts. After his friend points out how his hair has grown, the character produces the sentence in (28). In this context, all the speakers that produced the targeted 'since' structure used the perfect.[9] The postverbal usage of a temporal adverb meaning 'before' followed by *mai* 'come', analyzed as directional particle by Thieberger (2006:240), seems to be related to the universal meaning of perfect, as in (28) and (29) from Thieberger's (1995–2018) corpus.

[8] In Nafsan all property concepts are verbs.
[9] 3 out of 5 speakers produced the targeted 'since' structure.

(28) *nal-u-k ga* ***ki=pe*** *pei top* ***malpei mai*** *malen kin a=to lag eɱ̃rom ni*
hair-V-1SG.DP that 3SG.PRF=PRF first big before come when COMP 1SG=PROG sing inside of
band i=skei
band 3SG=one
'My hair has been long since I started singing in a band.' (AK1-152-03, 00:03:00.705-00:03:14.338, based on Koontz-Garboden 2007:142)

(29) *ku=tae weswes ofis, me* ***kui=pe*** *to miusik* ***teetwei mai****, me malfane*
2SG=can work office:BI but 2SG.PRF=PRF PROG (play)music:BI before come but now
p̃a=traem.
2SG.IRR=try
'you know how to work in an office, you've played music for a long time, but try working in an office.' (063.211, 063.212)

The universal reading with future reference has also been attested in the Perfect Questionnaire (Dahl, 2000c), as in (30). In this example *pe* is followed by the progressive marker *to(k)* in order to denote the progressive reading of the verb *weswes* 'work', which is an activity.

(30) [A began working here in June for almost thirty years ago. It is April and A tells that the anniversary is approaching:] A: In June this year I WORK here for thirty years. (Dahl, 2000c:PQ 85)
atlag ni june ntau nen ke=fo paap̃not ntau ralim i=tool nen ***kai=pe*** *tok*
month of June:BI year this 3SG=PSP.IRR finish year ten 3SG=three REL 1SG.PRF=PRF PROG
weswes esan.
work here
'In June this year it will be thirty years that I have been working here.' (AK1-132-01)

I turn to the expression of anteriority in Nafsan, which is equivalent to the meaning of past and future perfect in English. In Nafsan, the same form of perfect can express anteriority in past and future contexts. One such future context is presented in (31).

(31) Context: [B is setting out on a journey. A intends to sell her own house while B is away. A tells B:] (Dahl, 2000c:PQ 84)
malraan p̃a=ler mai ntau nen tu me ***kai=pe*** *sor nasuɱ̃ neu kia.*
when 2SG.IRR=return come year that next and 1SG.PRF=PRF sell house 1SG.POSS DEM
'When you come back next year, I will have sold my house.' (AK1-132-01)

The interesting property of anteriority readings is that, unlike other readings mentioned so far, they allow co-occurrences with past temporal adverbials. This can be illustrated by the contrast between (32) and (33). However, note that the Nafsan perfect behaves just like the English present perfect in allowing co-occurrences with some present temporal adverbials, like 'today' (34), see also Section 4.1.

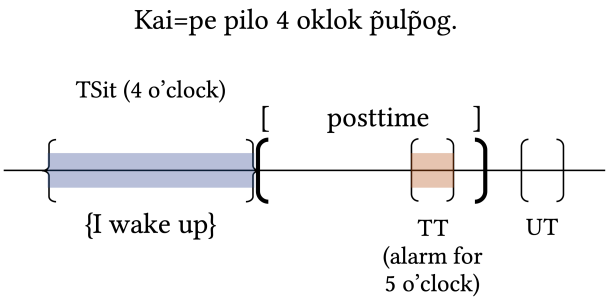

Figure 5.1: Representation of example (33)

(32) Context: A question asked at 9 o'clock a.m.: Why do you look so tired? Answer: I WAKE UP at 4 o'clock this morning (TT). (Dahl, 2000c:PQ 2, TMAQ 16)[10]

(*kai=pe) ***a***=*pilo* *4 oklok* ***p̃ulp̃og***.
*1SG.PRF=PRF 1SG=wake.up 4 o'clock morning
'I woke up at 4 o'clock this morning.' (AK1-119-01)

(33) Context: If your alarm is set for 5 a.m. (TT), but by chance you woke up at 4 a.m. (TSit).

Kai=pe *pilo* ***4 oklok p̃ulp̃og***.
1SG.PRF=PRF wake.up 4 o'clock morning
'I had woken up at 4 o'clock in the morning.' (AK1-119-01)

(34) *o me* ***mees kai=pe*** *mai paakor esa*
oh but today 1SG.PRF=PRF come appear here
'Oh, but today I have come out here' [...] (107.012)

Example (32) shows that the past temporal adverbial of 4 a.m., which sets the TT, is incompatible with the perfect. This is equal to the English present perfect which is incompatible with past temporal adverbs. However, (33) shows that 4 a.m. can be reinterpreted as being in TSit, if there is an indicated TT which is temporally posterior to it (5 a.m. in this case). This is illustrated in Figure 5.1, which shows that the perfect places the TT in the posttime of the TSit (Klein, 1994), see Section 4.1.

This pattern is confirmed by numerous other examples. For instance, example (35) with the past temporal adverbial *nanom* 'yesterday' is judged infelicitous with the perfect in the given present context, but in (36) from "Miss Smith's bad day" storyboard, on the other hand, the co-occurrence of the perfect and *nanom* is possible because we get an interpretation of past perfect. Since there is a salient TT referring to 'just now', the function of the perfect here is to contrast that TT with the time at which the event actually happened, which is yesterday. I model the meaning of (36) in Figure 5.2: 'just now' is the TT situated in the posttime of the TSit, and 'yesterday' is situated in TSit. The only difference between (33) and (36) is that 'just now' indicates that TT immediately precedes the utterance time.

[10]Some questions are published in both the Perfect Questionnaire (Dahl, 2000c) and the general TMA questionnaire (Dahl, 1985), indicated by TMAQ.

Ga ki=pe mat nanom su.

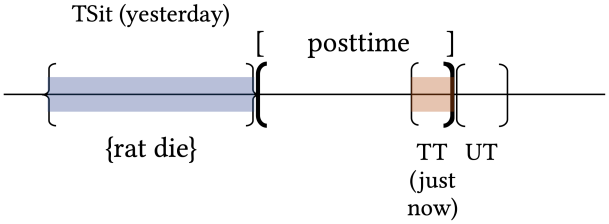

Figure 5.2: Representation of example (36)

(35) [It is morning. A wakes up, looks out of the window and sees that the courtyard (or the street) is wet.] A: It RAIN during the night. (Dahl, 2000c:PQ 14)

Uus ***(*ki=pe)*** *i=wo* ***nanom*** ***põg.***
rain (*3SG.PRF=PRF) 3SG-rain yesterday night

'It rained yesterday night.' (AK1-119-01)

(36) [Student A: "The rat the class takes care of has just died."] Student B: "He is lying, **he died yesterday**." (Perfect used by 5 out of 5 speakers) (Matthewson, 2014)

i=to *psir, ga* ***ki=pe*** *mat* ***nanom*** *su.*
3SG=PROG lie 3SG 3SG.PRF=PRF die yesterday PFV

'He is lying, he had died yesterday.' (AK1-146-04, 00:04:03.626-00:04:10.640)

One surprising fact about Nafsan is that the anteriority meaning can be established even when the TT includes the utterance time, as in (37) where both the TT and the TSit contain temporal adverbials *mees* 'today' and *nanom* 'yesterday', respectively. However, this structure is only possible when the sentence is saliently conveying the temporal contrast between the TSit and TT, and it would not be possible in an out-of-the-blue context without such a contrast, as in (35). Thus, the meaning of perfect in (37) is once again the one of anteriority, equivalent to the English past perfect and not present perfect. This is confirmed by the fact that the speaker's answer to the same stimuli as in (37), when leaving out the complement clause that created the anteriority relation between the two clauses, included the general subject marking and not the perfect (38).

(37) [My brother SAY yesterday that it RAIN today.] (Dahl, 2000b:FQ 73)

P̃al-u-k ***i=pe*** *til-i-ø* ***nanom*** *na us ke=fo* *wo mees.*
brother-V-1SG.DP 3SG=PRF say-TS-3SG.OBJ yesterday COMP rain 3SG.IRR=PSP.IRR rain today

'My brother had said yesterday that it would rain today.' (AK1-105-01)

(38) *Tai* ***i=to*** *tl-i-ø* *kia.*
brother 3SG=PROG say-TS-3SG.OBJ that
'My brother was saying that.' ('yesterday') (AK1-105-01)

The analysis of examples like (33), (36), and (37) has very important consequences for our under-

standing of the temporal adverb restriction with perfect in tenseless[11] languages, as well as languages in which perfect does not combine with tense. First and foremost, Matthewson (2014) designed the context in (36) in order to test the co-occurrence of temporal adverbials with perfect. As Matthewson et al. (2017) say, if the perfect can occur in that context then it does not satisfy the "past adverbial restrictions" and fails one of the tests for being identified as perfect aspect. Another problematic assumption about tenseless languages comes from Vander Klok & Matthewson (2015) who assume that when the present tense is not realized in a given language, it is expected that there is no restriction on past temporal adverbials. However, we have seen that in the case of Nafsan, where the perfect does not combine with any tenses, the co-occurrence with past adverbials is infelicitous in an out-of-the-blue context in which the TT includes the UT (present reference), which would be the default interpretation of perfect. That is why (32) and (35) are infelicitous with perfect: the perfect is understood as having the meaning of present perfect simply because there is no indication in the context that any kind of anteriority relation can be established. In the literature on tenseless languages it has been frequently noted that the perfect can combine with past temporal adverbs only in the meaning of past perfect (e.g. Tallman & Stout, 2016), but this discovery has not been clearly expressed as something that has to do with the lack of tense in a given language. Instead, it is often seen as something that needs to be explained away and is potentially hindering analyses of certain morphemes as markers of perfect in underdescribed languages.

As a tenseless language, Nafsan has shown that perfect can have either past, present or future readings, which has important implications on adverbial restrictions with perfect. One of the main tests for the perfect cross-linguistically is to see whether it can co-occur with temporal adverbials, since that is not expected from the present perfect. However, in a tenseless language or a language where the perfect cannot combine with tense,[12] the perfect can easily be reinterpreted as either past or future perfect and temporal adverbials as being in TSit. This property needs to be expected from perfects in tenseless languages and included in the typology of the perfect aspect.

5.2.2 Change-of-state meaning

In this section I analyze the meaning of change of state that arises with the Nafsan perfect and I show how it relates to the definition of perfect as situating the TT in the posttime of TSit. I also compare this meaning of change of state[13] to the iamitive category.

Olsson (2013) observed that in some languages the resultative perfect behaves differently from the English perfect when it comes to states. He illustrates this difference by comparing examples

[11] I take the term "tenseless" to mean "lacking tense categories". In Chapter 8 I show how Nafsan gets different temporal interpretations through realis/irrealis mood.

[12] As an anonymous reviewer pointed out, it is not only the lack of tense in general that interferes with the co-occurrence of temporal adverbials with the perfect. The lack of tense distinctions of past and present, as, for instance, in the case of future/non-future tense combined with perfect could yield the same effects with temporal adverbs occurring with the non-future perfect, as found with the tenseless perfect in Nafsan.

[13] I follow Koontz-Garboden's (2007) usage of the term "change of state" to refer to an interpretation that involves a moment of change of state, and not strictly to refer to that moment alone. Some authors refer to this meaning as "inchoative" (Choi, 2015; Matthewson et al., 2015; Hohaus, 2017).

(39) and (40), where (39) includes the English perfect and (40) illustrates the meaning of "iamitives" (see also Section 4.2.2).

(39) The fruit has been ripe.

(40) The fruit is/has become ripe.

Unlike the English perfect which gets only experiential or universal readings with states (39), iamitives necessarily express a change of state with stative verbs, in which they resemble the meanings of the aspectual particle 'already'. Essentially, the meaning of change of state is only possible with states which have an initial boundary like 'ripe', but not with properties like 'raw' (Olsson, 2013). This prediction is borne out in Nafsan, where perfect can be used with the property of 'ripe' (41), but not 'raw' (42).

(41) (Imagine some fruit that is common in your area) You can eat this one. It BE RIPE. (Olsson, 2013:47, IQ 7)
ku=tae paam tene, ***ki=pe*** *mam.*
2SG=can eat that 3SG.PRF=PRF ripe
'You can eat that, it's ripe.' (AK1-156-01)

(42) (Imagine some fruit that is common in your area) You can't eat this one. It BE RAW. (Olsson, 2013:47, IQ 6)
ku=kano paam tene, ***(*ki=pe)*** *i=ta met.*
2SG=cannot eat this 3SG.PRF=PRF 3SG=still raw
'You can't eat this, it's still raw.' (AK1-156-01)

This meaning of change of state can also arise with the Nafsan perfect whenever the verb is marked with the progressive marker, as in (43).

(43) *Me Meri* ***ki=pe*** ***to*** *mur seseerik.*
but Mary 3SG.PRF=PRF PROG laugh little
'But Mary started laughing a bit.' (AK-017, 00:22:23.126-00:22:25.838)

This property of combining the perfect/iamitive with the progressive marker has not been discussed for the languages which Olsson (2013) analyzes as having iamitives. Moreover, it has been noted by Ebert (2001) and Olsson (2013) that the NEWSIT/iamitives result in double readings with activities: they can be interpreted both as having been completed or holding at the utterance time (see Section 4.2). However, this is not possible in Nafsan because activities can only have the change-of-state interpretation if they occur with the progressive marker and the perfect, as in (44). This means that the coercion of activities into completed events by the perfect (Moens & Steedman, 1988), as exemplified by (24) in Section 5.2.1, can be blocked by the use of the progressive marker.[14] As expected, activities marked by the perfect aspect without the progressive marker are interpreted as completed,

[14] As mentioned in Section 4.2.2, "iamitive" languages typically also require a progressive marker in combination with the iamitive with verbs denoting activities in order to express the change-of-state meaning (Olsson, 2013:21). This property seems to exist due to the underspecification of lexical aspect.

as shown by the dialog in (45). The completion can also be specified by using the postverbal perfective marker *su*, as in (46).

(44) [Context: You are feeding a child and she doesn't want to eat the food you prepared for her. You stand up from the table and tell your sister 'Oh, she doesn't want to eat!', but then your sister says: 'Look, she is eating now/she started eating!']
P̃a=lek-a-ø, ***ki=pe*** ***to*** *faam.*
2SG.IRR=look-TS-3SG.OBJ 3SG.PRF=PRF PROG eat.IRR
'Look, she is eating now.' (Lionel Emil, 23/11/2018)

(45) Author: So, *ki=pe to faam* sounds better than just *ki=pe faam* [in (44)]?
Speaker: Yes, if she is eating now, then you say *ki=pe to faam.* But if she ate already a while ago then you say *ki=pe faam.*

(46) [Context: while taking plates from the dinner table]
ku=pe *faam* ***su****?*
2SG=PRF eat.IRR PFV
'Have you finished eating?' (AK1-023-01)

Interestingly, if the perfect combines with the verb *to* 'stay' as the main verb and is followed by an irrealis complement clause, we obtain the meaning of immediate future, as in (47) (see also Section 5.1.1). This meaning seems to arise due to the presence of the irrealis subject marking which is typically interpreted as immediate future when there are no other TMA markers present (see Section 8.3.2). The verb 'stay' marked by perfect denotes a change of state that leads to the described irrealis event interpreted as immediate future.

(47) (At a birthday party for a child) Little brother BE ABOUT TO ARRIVE! (So hide the gifts he is to get and be ready to scream "surprise!") (Olsson, 2013:IQ 28)
Tai sees ***ki=pe*** ***to*** ***na*** ***ke=****mai ki.*
brother small 3SG.PRF=PRF stay COMP 3SG.IRR=come DEM
'Little brother is about to arrive!' (AK1-156)

In the storyboard "Haircuts", the meaning of change of state was elicited through the following context. Mary and her friend Kal are talking about how they changed their haircuts since they last met. So, Mary says that her hair used to be red, but it is blond now. This meaning of change of state was derived by the perfect *pe*, as shown in (48). This shows that the perfect gives rise to a change-of-state interpretation with states and contrasts with states marked only with the general marking, as shown in the corpus example (49), which refers to the permanent property of a stone.

(48) *Malfane nal-u-k* ***ki=pe*** *taar.*
now hair-V-1SG.DP 3SG.PRF=PRF white
'My hair is blond now.' (AK1-146-03, 00:03:31.991-00:03:33.853)

(49) *ku=lek faat ne. faat nen* ***i=top***
2SG=look stone this stone that 3SG=big
'You look at that stone. That stone is big.' (015.033)

The question here is how to analyze the meaning of change of state in Nafsan. As discussed in Section 4.3, there have been various approaches to solving this problem in other languages and they can be divided into two main streams: the change-of-state meaning is a part of the modified perfect semantics, and the change-of-state meaning is not a part of the perfect semantics. The former approach includes reanalyzing the perfect either as an inchoative marker (Matthewson et al., 2015; Hohaus, 2017), as 'already' (Vander Klok & Matthewson, 2015), or a iamitive (Olsson, 2013), and the latter proposes that this meaning is somehow related to the properties of the lexical aspect. In Section 5.2.1 I showed that Nafsan has almost all functions associated with the perfect aspect, and especially so with the well-described English perfect. Thus, the cluster of these perfect functions in Nafsan is best explained without reanalyzing the Nafsan perfect. The iamitive and the inchoative analysis would not be able to account neither for the experiential, universal, and anteriority readings of *pe*, nor for the restrictions on past temporal adverbials.

There are three different approaches within analyses relating the change-of-state meaning to the lexical aspect:

- Some verbs are lexically defined as states and others as "inchoative states", which means that the latter lexically encode the change-of-state meaning (for Korean [kor] see Choi 2015, for Sḵwx̱wú7mesh [squ] see Bar-el 2005, and for Sənčáθən [str] see Kiyota 2008).
- All 'stative' verbs are underspecified lexically: there is no lexical difference between the stative and the change-of-state meanings, e.g. 'big' means both 'big' and 'become big'.
- The states are lexically only stative and are differentiated from dynamic verbs: their change-of-state meaning is a result of coercion into dynamic verbs under the resultative reading of perfect (for Tongan, Koontz-Garboden, 2007).

I adopt Koontz-Garboden's (2007) analysis of coercion because, as will become clear through my argumentation, the other two approaches cannot capture the fact that the main difference in the interpretation of states in Nafsan is between the presence and absence of perfect. Thus, if we compare (50) and (51), we see that the same stative verb *top* 'big' is interpreted either in its default stative reading with the general subject marking (50) or with the interpretation of change of state with the perfect marking (51). Equally, the verb *pi* 'be' is interpreted as a state with the general subject proclitic in (52) and as involving a change of state or 'become' in (53).

(50) *go faat p̃ur i=nrik-i-n kin na ag* ***ku=sees*** *me kineu* ***a=top***
and rock big 3SG=tell-TS-3SG.OBJ COMP COMP 2SG 2SG=small but 1SG 1SG=big
'And the big rock said: "You are small, but I am big."' (046.012)

(51) [Context: There used to be some devils in the village a long time ago.]
i=welkia naor ki=pe, ***ki=pe*** ***top*** *me ru=lakor to me ru=kus*
3SG=thus place 3SG.PRF=PRF 3SG.PRF=PRF big and 3PL=may stay but 3PL=hide
'Well, the place [village] got bigger and bigger and they may still be there, but they are hiding.' (073.052)

(52) [Context: describing American people in the World War II]
ru=pi *naɱ̃er wi nafisoklepwen gar i=top*
3PL=be people good richness 3PL.POSS 3SG=big
'They were good men. They were very rich.' (041.007)

(53) [Context: young people of today follow unhealthy new fashion]
welkia ***ki=pe*** ***pi*** *naɱ̃olien ni mes ne*
like.that 3SG.PRF=PRF be life of today DET
'This is what the life of today has become.' (127.044)

These examples make it appear implausible that there are states in Nafsan which could be lexically defined as "inchoative states" – depending on the verb marking, any states can receive a change-of-state interpretation. The underspecification approach also cannot account convincingly for these data, because the stative meaning obtained with the general proclitic is the default meaning obtained in neutral, out-of-the-blue contexts, and it does not require special constructions or morphology. Crucially, in examples like (50) and (52), the change of state interpretation would simply not be possible with the general subject proclitics. I show how the coercion analysis captures the fact that stative verbs with the general subject proclitics express their primary meaning which is stative, and how a secondary meaning of change of state can be derived through aspectual coercion.

I maintain the analysis of perfect as placing the TT in the posttime of TSit and I adopt the analysis of aspectual coercion proposed by Koontz-Garboden (2007) for Tongan. In Nafsan, like in Tongan, there is no derivational change-of-state morphology, which leads to the possibility of the same form of the verb having both stative and change-of-state interpretations. One of the crucial arguments in Koontz-Garboden's (2007) analysis is accounting for different types of constructions that make reference to the time interval at which the change from a previous state to a new state takes place. Koontz-Garboden (2007:140) analyzes the rate adverbs in the following way: "What *quickly* and *slowly* do as rate adverbials is to say something about the relationship between change and time, in particular about the amount of time over which the change took place." Thus, since the rate adverbs refer to the time interval involving change they are incompatible with states in English, as in (54).

(54) #Kim knew Sandy quickly. (unless CoS 'come to know') (Koontz-Garboden, 2007:139)

In languages like Tongan or Nafsan, the rate adverbs can occur with stative verbs because they get coerced into a dynamic event of change-of-state. Although in neutral contexts like (50) and (52) only a stative meaning is possible in Nafsan, in special constructions which involve rate adverbs referring to the interval of change in time, the stative semantics of the verb is in conflict with the reference to the interval of a dynamic change into a new state. In Nafsan, just like in Tongan, these stative verbs can then be coerced into the meaning of change of state (Koontz-Garboden, 2007). In Nafsan, in (55) we see that the state *maet* 'angry' can be interpreted as 'become angry' even with the general proclitic because of the presence of the rate adverbial *pelpel* 'quickly'.

(55) Question: In the context of a teacher who gets angry in the classroom because all the kids are misbehaving, how would you say 'the teacher got angry quickly'?
Teplaksok ***i**=maet* ***pelpel**.*
teacher 3SG=angry quickly
'The teacher got angry quickly.' (Lionel Emil, 28/11/2018)

Naturally, the same change-of-state meaning as in (55) can be expressed by using the perfect, as shown in (56) which was elicited for the same context.

(56) *teplaksok* ***ki=pe*** *maet.*
teacher 3SG.PRF=PRF angry
'The teacher got angry.' (Lionel Emil, 28/11/2018)

The process of aspectual coercion parallel to that of rate adverbs is exactly what happens with readings of perfect that require a dynamic event – in Nafsan, the change-of-state interpretations with perfect arise only with the resultative perfect, which requires a dynamic event. Experiential and universal functions of perfect are compatible with states without triggering a change-of-state meaning, see examples (27) and (28) in Section 5.2.1.[15] A definition of the resultative perfect by Koontz-Garboden (2007:124) is given in (57).

(57) "A perfect in the resultative reading denotes a state ϕ which is true at an interval R iff there is an interval E, the final moment in E is the initial moment in R, and ϕ is false at the initial bound of E and true at the interval R." (Koontz-Garboden, 2007:124)

When the resultative perfect semantics combines with states, it gives rise to an inference that the state denoted by it was preceded by a change into it, which is in conflict with the stative semantics, and this leads to the coercion of states into changes of state (Koontz-Garboden, 2007). Thus, the interval of change of state is interpreted as TSit and TT is placed in the posttime of this change of state. This is illustrated in Figure 5.3 for example (56). Regarding the definition in (57), TSit corresponds to E, TT to R, and the posttime 'be angry' to ϕ.

Crucially, this process of aspectual coercion resulting in the meaning of change of state affects only states and progressive-marked activities, whereas other dynamic events receive a completive interpretation with the resultative perfect, as shown in examples (46) in this section and (24) in Section 5.2.1.

The existence of the meaning of change of state with the Nafsan perfect is directly relevant for the proposal of the iamitive category as a cross-linguistic category. The iamitive proposal attempts to capture the connection between the resultative reading of perfect and the meaning of change of state by analyzing it as a new typological gram, and it separates these meanings from other functions of the perfect (Olsson, 2013). The case of Nafsan shows that the meaning of change of state and the

[15] This also shows that an inchoative analysis, where the inchoative/change-of-state meaning is the basic meaning of this grammatical category, as suggested by Matthewson et al. (2015) for Niuean, could not explain the Nafsan data. The inchoative analysis implies that the states marked by the inchoative marker can only be interpreted with the inchoative meaning, and it excludes the possibility of experiential and universal readings of states (Matthewson et al., 2015).

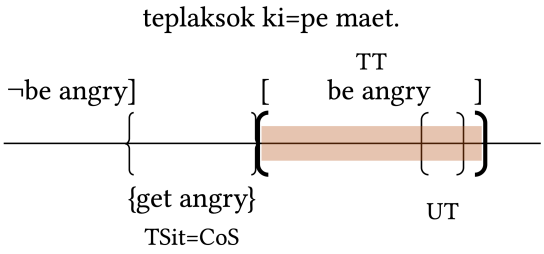

Figure 5.3: Representation of example (56)

resultative meaning can be functions of the same grammatical morpheme that expresses experiential, universal, and anteriority meanings. This shows that these meanings are semantically related within the category of perfect, and that the meaning of change of state is not necessarily symptomatic of a new TMA category. Moreover, the derivation of the meaning of change of state can be explained via language-internal processes, such as aspectual coercion. For Oceanic languages, Koontz-Garboden (2007) observes that there are two typological Oceanic features that might make these languages susceptible to developing the change-of-state meaning. Firstly, Oceanic languages do not encode the meanings of change of state derivationally and thus need to employ other processes triggered in specific contexts, such as aspectual coercion, to disambiguate the change of state readings from states. Secondly, they typically do not distinguish verbs from adjectives in the predicate position. This means that property concepts behave like verbs and in a resultative reading of perfect require a dynamic interpretation of change of state. In conclusion, we should focus on these language and family-internal processes that lead to the perfect developing the change-of-state meanings instead of positing that the meaning of change of state is indicative of the new typological category of iamitives.

5.2.3 Expectedness and duality

It has been shown that the meaning of change of state, as described in Section 5.2.2, is related to the meaning of ‘already’ (Vander Klok & Matthewson, 2015). Olsson (2013) considers the meaning of ‘already’ to be an integral part of the iamitive semantics. Coming back to the example of ‘fruit being ripe’ (Section 5.2.2), we can see that the change-of-state meaning in Nafsan is semantically closer to a sentence with ‘already’ in English (58) than it is to the version with the English perfect, which can only get experiential or universal readings (cf. (39) in Section 5.2.2).

(58) The fruit is already ripe.

This section addresses the relationship between the Nafsan perfect meanings and the meaning of ‘already’. There are two defining semantic properties of ‘already’ I explore here. These are the implications of deviating from what was expected and effects of duality with negation (see Section 4.2.1). Olsson (2013) also takes “expectedness” that an event was going to take place as a characteristic of iamitives in some languages.

In Nafsan the implications involving expectedness are not a part of the perfect semantics. Example (59) comes from the storyboard "Fat pig" (von Prince, 2018b), where the main character gets a pig he needs for his big traditional ceremony. He fenced the pig off, but the next day, to his surprise, the pig was not there. As we can see, perfect is used here to indicate the anteriority of the event of the pig escaping and the interpretation that the event was expected would not be possible.

(59) *Me malnran kin i=pan check, i=pan lak tp̃er ni waak me i=laka na waak*
but when COMP 3SG=go check 3SG=go see fence of pig but 3SG=see COMP pig
ki=pe *p̃rai tp̃er,* ***ki=pe*** *sef.*
3SG.PRF=PRF break fence 3SG.PRF=PRF escape
'But when he went to check, he went to see the fence with the pig and he saw that the pig had broken the fence, it had escaped.' (AK1-022-01, 00:03:24.726-00:03:37.121)

The implication about expectedness does not arise in Nafsan even in the case of resultative readings. Example (60) comes from the Iamitive Questionnaire (Olsson, 2013:48) and targets an unexpected event. In Nafsan, the perfect can be felicitously used in this case, which shows it does not behave like 'already' in this respect.

(60) How strange, my uncle COME. (He wasn't invited/I thought he wouldn't come.) (Olsson, 2013:48, IQ 36)
Kau, ga ***ki=pe*** *mai!*
Oh 3SG 3SG.PRF=PRF come
'Oh, he came!' (AK1-156-04)

There are some cases in which it might appear that the perfect has implications involving expectedness, as in (61). This example targets an event that happened earlier than expected, which would be expressed by 'already' in English.

(61) [The baby wakes up one hour earlier than expected and starts screaming. Mother (in another room):] Oh, no! He WAKE UP already! (Dahl, 2000c:PQ 31)
ga ***ki=pe*** *pilo (su).*
3SG 3SG.PRF=PRF wake.up (PFV)
'He has woken up already!' (AK1-120-01)

This earliness/expectedness interpretation in (61) is highly context-dependent and it does not seem to be a contribution of the perfect meaning. As mentioned above, the typical meanings of perfect do not involve these types of inferences, which means that the expectedness must be a more general property derived from the discourse. Also, although some Oceanic languages have markers meaning 'already' as well as some kind of perfect aspect, Nafsan does not have a single lexeme dedicated to the meaning of 'already'. This means that the meaning of 'already' overlaps with the available TMA markers in Nafsan: sometimes this is the perfect and other times it is another TMA marker. For instance, the prospective marker *po* seems to be equally well acceptable in most of the cases involving some kind of expectedness in the questionnaires. We can see this in (62) where both the perfect *pe*

and the prospective *po* are chosen as appropriate expressions (for more details on the meaning of the prospective *po* see Section 5.3.1).

(62) (Talking about a teenager who didn't come home on time) Max CALL (YET)? (Veselinova, 2018:NQ 51)

Max ***ki=pe*** *ring ko?/ Max i=****po*** *ring?*
Max 3SG.PRF=PRF call or Max 3SG=PSP.REAL ring
'Did Max call yet?' (AK1-156)

We can conclude that the meaning of expectedness can arise independently of the perfect itself. The best evidence for this is that this meaning arises with other aspectual markers as well. Thus, the expectedness can only be analyzed as governed by the particular discourse situation and not as related to the semantics of perfect. Interestingly, even in the case of iamitives, this meaning was found as relevant only in some languages proposed to have iamitives by Olsson (2013). In Olsson's (2013) analysis, it is also not clear whether this property is accidentally related to the iamitives in question or whether there is a systematic correlation between the expectedness and the proposed iamitive semantics which is somewhere in between the perfect and 'already'. Moreover, even in the case of 'already', the meanings related to expectedness are often considered to be implications derived through the pragmatics and not semantics (Krifka, 2000), as shown in Section 4.2.1. Equally, even the usage of the perfect in English leads to interpretations of expectedness in questions and under negation (Traugott & Waterhouse, 1969), as in the question *has he finished the paper?* or a negative statement *I haven't done it.* Thus, the meaning of expectedness should not be regarded as encoded in the semantics of these grammatical categories. It is also needed to say that "expectedness" is a highly ambiguous term (here adopted from Olsson, 2013) and should be avoided as a general concept, because there are many different ways in which something can be expected (cf. "earlier or greater than expected" for 'already' in Section 4.2.1), and there are possibly many different pragmatic strategies which can lead to these interpretations.

The second property of 'already' considered here is duality, which has to do with the interaction of 'already', 'still', 'not yet', and 'not anymore' in negation. As shown in Section 4.2.1, Löbner (1989) argued that the outer negation of 'already' is 'not yet', which is truth-conditionally equivalent to the inner negation of 'still'. Also, the outer negation of 'still' is 'not anymore', which is truth-conditionally equivalent to the inner negation of 'already' (Löbner, 1989) . The set of these relationships is illustrated in Figure 5.4, including both Nafsan and English strategies for expressing these meanings.

As we can see in Figure 5.4, the Nafsan perfect enters the duality schema only with states and progressives as unbounded predicates, with which the negated perfect obligatorily gives rise to the meaning of 'not anymore', as in (63) from the storyboard "Haircuts". This meaning is also found in the corpus data (64).

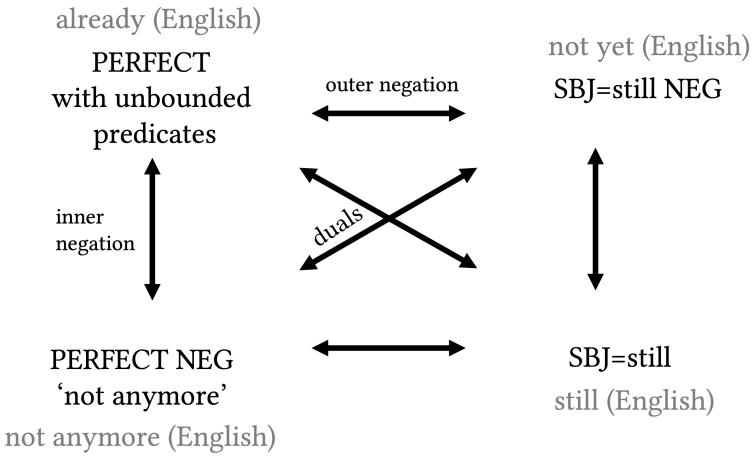

Figure 5.4: Duality schema with Nafsan perfect (in black font), based on Löbner (1989)

(63) *totur ntau i=nru nal-u-k ga i=miel me malfane nal-u-k* ***ki=pe***
during year 3SG=two hair-V-1SG.DP 3SG 3SG=red but now hair-V-1SG.DP 3SG.PRF=PRF
ta *miel* ***mau****.*
NEG1 red NEG2
'During these two years my hair was red, but it's not red anymore.' (AK1-154-03, 00:03:36.645-00:03:52.483)

(64) *A=to lek nawesien me* ***kai=pe*** ***kano*** *weswes.*
1SG=PROG see work but 1SG.PRF=PRF cannot work
'I see work (that needs to be done), but I can't work anymore.' (040.044)

In the case of perfect-marked predicates with a perfective/bounded reading, the meaning of 'not anymore' does not arise with negation and we can see this in (65), where the intended meaning is a simple negation of the described event. This is also possible with states which are temporally delimited by an adverbial (66). Another case comes from the storyboard "Chore girl" (TFS, 2011a) in which Mary's friends invite her to go out several times, but every time they come by she says she has household chores to do and cannot join them. The last time they come by, she says she cannot go out because she broke her leg (67). Since there is no indication that prior to that Mary could in fact go out, the intended meaning here is *not* 'not anymore'. The negated perfect here is better analyzed as referring to the result of breaking a leg.

(65) *Malen p̃a=ler* ***kai=pe*** ***ta*** *mtir natus* ***mau****.*
when 2SG.IRR=back 1SG.PRF=PRF NEG1 write letter NEG2
'When you come back, I will not have written the letter.' (by Lionel Emil, 19/06/2018)

(66) [Question: Why do you look so tired?] Answer: I NOT SLEEP for three days. (Dahl, 2000c:PQ 47)

kai=pe ***ta*** *matur p̃og i=tool* ***mau*** *to ki.*
1SG.PRF=PRF NEG1 sleep night 3SG=three NEG2 stay TOP
'I haven't slept for three days.' (AK1-124-01)

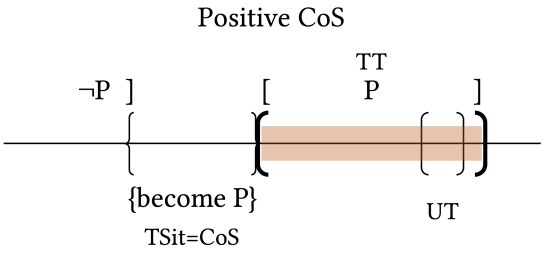

Figure 5.5: Representation of the positive perfect with the meaning of change of state

(67) *me nlaken a=p̃rai natuo-k go malfanen* ***kai=pe*** ***kano*** *taf.*
but because 1SG=break leg-1DP and now 1SG.PRF=PRF cannot go.out
'I broke my leg so I can't go out.' (AK1-094-01, 00:03:53.321-00:04:07.180)

However, even with bounded predicates the meaning of 'not yet' cannot be expressed with the negated perfect. As we can see in (68), the perfect can only be chosen for positive resultative readings, but not for the negative ones expressing 'not yet'. Instead, the only possible structure is the negation of *ta* 'still' marked with the general subject marking. The reason for this comes from the fact that the only way to express 'not yet' is to negate *ta* 'still'. Since *ta* 'still' is a TMA marker which occupies the same syntactic slot as the perfect *pe* (see Table 2.14 in Section 2.3.2), they cannot co-occur. In fact, none of the TMA markers of that slot (e.g. *po, fo, f, fla*) can combine with each other. Thus, the perfect is incompatible with 'still' and 'still not'(='not yet') due to a morphosyntactic restriction.[16]

(68) *Ale* ***ki=pe*** *ptu-ki nuan me tomat* ***i=ta*** ***tap*** *ptu-ki nuan* ***mau.***
then 3SG.PRF=PRF give-TR fruit but tomato:BI 3SG=still NEG1 give-TR fruit NEG2
'It [pumpkin] gave fruit, but tomato hasn't given any fruit yet.' (AK1-038-01, 00:01:28.459-00:01:39.486)

In contrast, the 'not anymore' meaning with states and progressives deserves a semantic explanation. As shown in Section 5.2.2, the states and progressives are aspectually coerced into changes of state. Thus, if P is the posttime of the change of state, we need to assume that prior to the change of state ¬P was the case, as illustrated in Figure 5.5. If we negate P, then, given that it resulted from a change of state, we must assume that prior to that P was the case, as shown in Figure 5.6, and this is the meaning of 'not anymore'.

In conclusion, the meaning of 'not anymore' is simply a result of the aspectual coercion process that affects all stative and progressive predicates marked with the perfect. Equally, the marker *ta* 'still' is morphosyntactically incompatible with the perfect *pe* because they occupy the same mor-

[16] A question that arises here is why does such a morphosyntactic restriction exist in the first place. In other words, the morphosyntactic incompatibility of 'still' and the perfect could have been diachronically motivated by semantics. In lack of an understanding of its diachronic development, at present it is not clear whether semantic incompatibility has necessarily played a role in this process.

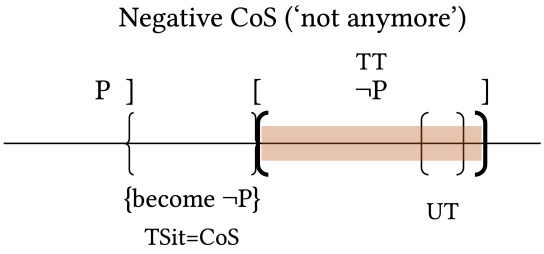

Figure 5.6: Representation of the negated perfect with the meaning of change of state

phosyntactic slot. Thus, the effects of duality we see in Nafsan result from different language-internal processes and, in contrast to 'already' and iamitives, these effects do not arise as a consequence of the semantic definition of the perfect.

Regarding the debate about the cross-linguistic and semantic validity of iamitives, in Olsson's (2013) proposal it is not clear what processes in the iamitive semantics lead to the duality effects: is it through the same processes as in the case of 'already' in English or other types of language-specific processes as described above for Nafsan? In order to distinguish between these different ways duality effects can arise, we need to focus on the processes specific to the language under study and we might find that duality effects exist in different TMA categories for different reasons. This means that, unlike what has been proposed by Vander Klok & Matthewson (2015), identifying duality in a language does not necessarily indicate that we are dealing with the semantics of 'already'.

5.3 Perfect vs. other aspectual markers

In this section I focus on two relationships between the perfect *pe* and other aspectual markers in Nafsan, which are relevant for our understanding of the perfect aspect. One relationship is that of paradigmatic contrast, addressed in Section 5.3.1 and the second is that of compositionality of TMA marking discussed in Section 5.3.2.

5.3.1 'Hot news' meaning with *po* and paradigm effects

In this section I address the issue of certain perfect functions lacking in a category that otherwise fits the description of the perfect aspect. The choice of which functions are crucial to the perfect semantics and need to be present in any category labeled as perfect plays a very important role in our understanding of the cross-linguistic properties of the perfect and its use in language description. For instance, one of the reasons for proposing the new category of iamitives was to explain the existence of "perfect-like" categories that do not include the experiential function, which was considered a core function of perfect by Dahl & Velupillai (2013b). However, one might question how to decide on the quality and the number of "core" functions of a given category. I contribute to this discussion by showing that, regardless of what the "expected" functions of some category are, if any expected

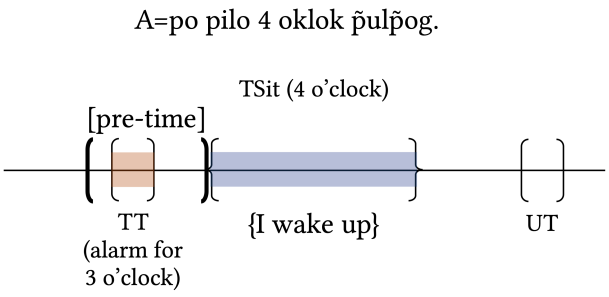

Figure 5.7: Representation of example (69)

function is not expressed by the expected category, that is because there is another marker used for that meaning. In other words, the paradigmatic contrasts between the available TMA markers play as much of a role in governing the clustering of functions as do semantic principles. I focus on the 'hot news' meaning in Nafsan, which cannot be expressed with the perfect *pe*. Although the 'hot news' meaning does not play a crucial role in theories of perfect, if the English perfect is taken as the model of the perfect category, as in Dahl (1985) and Dahl & Velupillai (2013b), we need to explain the absence of this meaning in the case of the Nafsan perfect. Moreover, there is nothing in the semantic definition of perfect in Nafsan that would make it incompatible with the 'hot news' meaning. I argue that the reason for the absence of this meaning with perfect is the usage of the prospective marker *po* for the 'hot news' meaning. I start by briefly describing the general meaning of *po* and then present its usage with the 'hot news' meaning.

The marker *po* is labeled as prospective realis (Thieberger, 2006) and I define its meaning more specifically as situating the TT in the pre-time of the described event, and denoting that the event belongs to the actual world as per its realis component of meaning. Moreover, unlike the English prospective ('going to/about to') where the inference in the past is that the event did not happen, since *po* refers to the actual world, it denotes that the event did happen.[17] In this sense, *po* is similar to sequential markers in Oceanic languages (see also Lichtenberk, 2014). Example (69) shows a prospective event which took place at 4 a.m., but the TT (3 a.m.) necessarily precedes it. This example is represented in Figure 5.7. This meaning is the mirror image of the perfect meaning in example (33) in Section 5.2.1.

(69) [If you are supposed to wake up at 3 a.m. and then you wake up at 4 a.m.] Based on Dahl (2000c:PQ 16)

a=po *pilo* *4 oklok* *p̃ulp̃og.*
1SG=PSP.REAL wake.up 4 o'clock morning
'I woke up (only) at 4 o'clock.' (AK1-119-01)

Another example in which the event marked by *po* is posterior to the TT is presented in (70) and

[17] See also Copley's (2018) work on futurates, "which make reference to a planned, scheduled, or settled future without any obvious future morphology" (Copley, 2018:32). According to her work, the futurates mark events in the future, but are considered realistic because their preparations are real.

Nanom p̃og apei matur me paluk ipo mai pak esum̃.

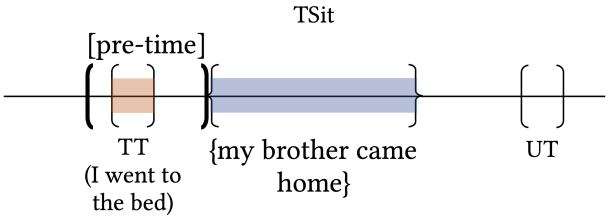

Figure 5.8: Representation of example (70)

in Figure 5.8.

(70) [(Yesterday evening) I GO to bed before my brother COME home.] (Dahl, 2000b:FQ 22)
Nanom p̃og, a=pei matur me paluk ***i=po*** *mai pak esum̃.*
yesterday evening 1SG=first sleep but brother 3SG=PSP.REAL come to house
'I went to bed before my brother came home.' (AK1-083-01, 00:42:35.506-00:42:40.883)

Although *po* is most frequently used with the past reference in my data and in the corpus, the present reference is also possible, especially with habitual readings in narratives, as in (71). In (71) the TT is the event of 'falling at Tasiriki' and the TSit is 'calling it Kalros reef'.

(71) *i=sog to leg ki Tasrik pak elau san kin mees ru=***po** *sos-o-ø ki*
3SG=fall stay straight to Tasrik to shore there REL today 3PL=PSP.REAL call-TS-3SG.OBJ PREP
nskau Kalros.
reef Kalros
'he fell right at Tasiriki on the beach where today they call it Kalros reef' (128.027)

I turn now to the 'hot news' uses of *po*. At this stage, I do not offer an analysis that explains how this meaning is semantically or pragmatically derived from the prospective realis definition of *po*. I can only conclude that, in contrast to the perfect *pe*, events marked by *po* obligatorily denote realis events, and that means that *po* is a better candidate than the tenseless perfect to express the past reference immediately preceding the utterance time. In all cases where the 'hot news' meaning was elicited or produced *po* instead of *pe* was chosen by the speakers. Examples (69)-(75) show some of the 'hot news' meanings in the questionnaires and (76) in a spontaneous dialog.

(72) [Telling what a baby just DO. "N" should be replaced with a girl's name.] N just SAY her first word! (Dahl, 2000c:PQ 57)
N ***i=po*** *til nafsan pei ga.*
N 3SG=PSP.REAL say word first 3SG.POSS
'N has just said her first word.' (AK1-126-01)

(73) (Talking about a teenager who didn't come home on time) Max JUST COME (Veselinova, 2018:NQ 53)
Max ***i=po*** *mai kia.*
Max 3SG=PSP.REAL come DET
'Max has just come.' (AK1-156)

(74) [The speaker meets his friend about once a week; "the film" refers to a different film each time:] Every time I MEET him, he TELL me about the film he (just) SEE. (Dahl, 2000c:PQ 53)
ser nrak nen ka=lek-a-ø, ke=fo neu traus film nen
every time COMP 1SG.IRR=see-TS-3SG.OBJ 3SG.IRR=PSP.IRR 1SG.BEN tell film REL
i=po *lek-a-ø su.*
3SG=PSP.REAL see-TS-3SG.OBJ PFV
'Every time I meet him, he tells me about the film he has just seen.' (AK1-125-01)

(75) [A's sister finished writing two letters just before A came home. A tells:] When I COME home yesterday, my sister WRITE two letters. (Dahl, 2000c:PQ 75)
kor-e-k ***i=po*** *to mtir silu natus i=nru malen a=tkal esum̃.*
sister-V-1SG.DP 3SG=PSP.REAL PROG write every letter 3SG=two when 1SG=reach home
'My sister had just written the two letters when I reached home.' (AK1-132-01)

(76) *Kineu ga* ***a=po*** *mai ki me a=to na ka=mer sak teflaan ki,*
1SG INTERJ 1SG=PSP.REAL come DEM but 1SG=PROG COMP 1SG.IRR=again up like DEM
ka=fan lek teet neu.
1SG.IRR=go.IRR see sister 1SG.POSS
'I have just come now, but I'm going up this way again to see my sister.' (AK1-053-01, 00:00:41.125-00:00:45.578)

The idea that different members of the paradigm can have effects of blocking on other elements has most extensively been studied on the morphological level (Embick & Marantz, 2008) and lexical level (Blutner, 1998). For example, the existence of the irregular form *gave* blocks the usage of an otherwise regular form **gived* in the English past tense (Embick & Marantz, 2008). In semantics, the notion of blocking has been used to explain why "kill" is not equivalent in its meaning to "cause to die". While "kill" gets an interpretation of "direct killing", "cause to die" refers to more "indirect killing" (Fodor, 1970). Thus, since "kill" already denotes the direct killing, this meaning is blocked for "cause to die" (see Zeevat, 2000; Benz, 2006). In the MelaTAMP project, we have noticed that in the languages of our study, this type of reasoning extends to the semantics of TMA paradigms (see also von Prince, 2018d). Thus, whenever a certain category does not have all the functions that are cross-linguistically or semantically related to its definition, there is always another marker with that function in the TMA system of the language. In Nafsan, the meaning of 'hot news' is the only meaning that cannot be expressed by the perfect even though it is compatible with its semantic definition of being in the posttime of the described event. The reason for this is that the marker *po* is specialized for this meaning in Nafsan (for the reason offered above) and is thus considered to be a more informative choice for this meaning than the perfect *pe*. This means that *po* blocks the usage of *pe* for the 'hot news' meanings. This type of reasoning can explain why in some languages certain "perfect" functions are absent – their TMA morphology for expressing different meanings typically

associated with perfect is simply more granular than in other languages. This renders proposing new categories of the same but slightly restricted semantic space unnecessary. I illustrate these semantic spaces by presenting the semantic maps that will be further discussed and analyzed in Chapter 6. Figures 5.9, 5.10, and 5.11 show the semantic spaces of the English perfect, the English 'already', the Nafsan perfect, and the iamitives. In Figure 5.9 we can see that the semantic space studied in this chapter is occupied by the perfect and 'already' in English (see also Section 5.3.2). In Nafsan, the perfect occupies almost the same space as the English perfect, except for the change-of-state and the 'hot news' meaning, as shown in Figure 5.10. Note that there is no dedicated word for 'already' in Nafsan, which could explain why perfect extends to the change-of-state meaning. On the other hand, the 'hot news' meaning is expressed by the prospective *po* marker and that makes it unavailable for the perfect *pe*. For the pragmatic explanation of expectedness, see Section 5.2.3. Lastly, Figure 5.11 shows the semantic space of the iamitive category proposed by Olsson (2013). On the basis of these semantic maps, the only predicted difference between different languages is the level of granularity in expressing different perfect and 'already' meanings. As implied by the semantic maps, in some languages each of these functions might be expressed by a single marker and in others one marker can comprehend several functions. Thus, proposing the existence of a separate iamitive category does not capture a new semantic identity separate from the perfect or 'already' nor does it bring new insights about the configuration of meanings in this semantic space. In the next chapter this argument is supported by cross-linguistic evidence from other Oceanic languages.

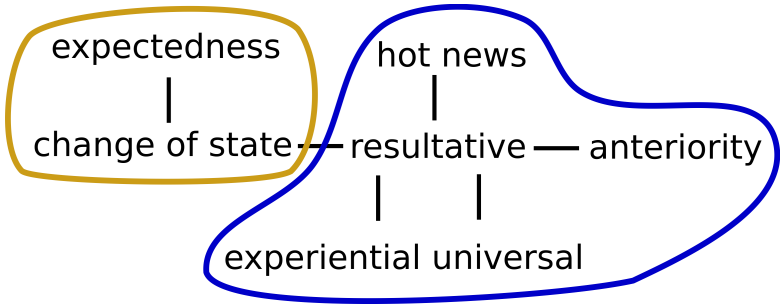

Figure 5.9: Semantic map of the English perfect in blue and the English 'already' in yellow

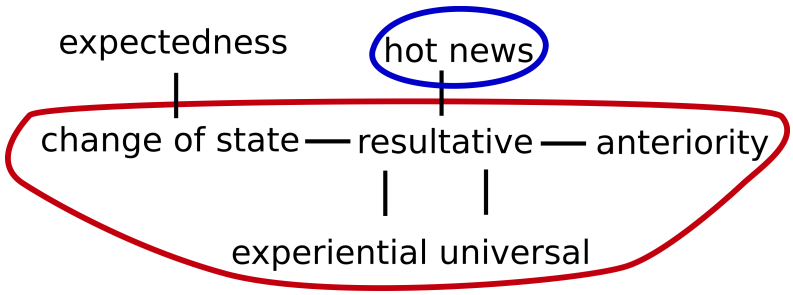

Figure 5.10: Semantic map of the Nafsan perfect in red and the prospective *po* function in blue

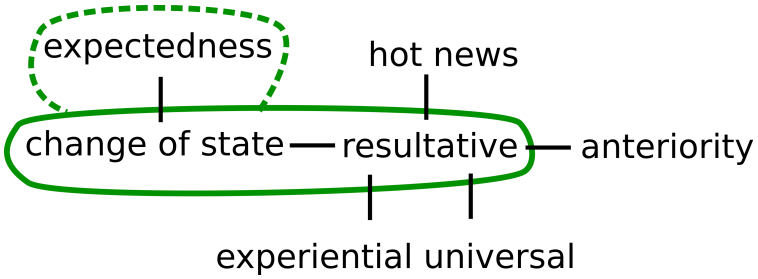

Figure 5.11: Semantic map of the proposed iamitive functions (Olsson, 2013)

5.3.2 Postverbal *su* and composite TMA marking

In Section 5.3.1 I discussed relationships between TMA markers based on paradigmatic contrasts and in this section I focus on composite TMA marking. One of the features of the Nafsan TMA system are the rich combinatorial possibilities of the TMA marking, which means that TMA markers of different slots can co-occur. In this section I describe the distribution of the perfective marker *su* in relation to the perfect.

The marker *su* occurs in the clause-final position, as we can see in (77), where it follows the object 'three men'. It is an optional marker of a much lower frequency than the perfect *pe*. Although it has a similar distribution as *finis* 'finish' in Bislama, which was labeled as completive by Crowley (2004), its distribution can be better explained under the category of perfective (Thieberger, 2006). I follow the definition of perfective by Smith (1997:66), as including both the initial and final endpoints of the situation, as illustrated in Figure 5.12 with English past tense, where the situation of walking is included in its entirety in the reference time of 'yesterday'.

(77) *Kineu a=pam natam̃ol i=tool* ***su.***
1SG 1SG.REAL=eat man 3SG.REAL=three PFV
'I have eaten three men.' (Thieberger, 2006:265)

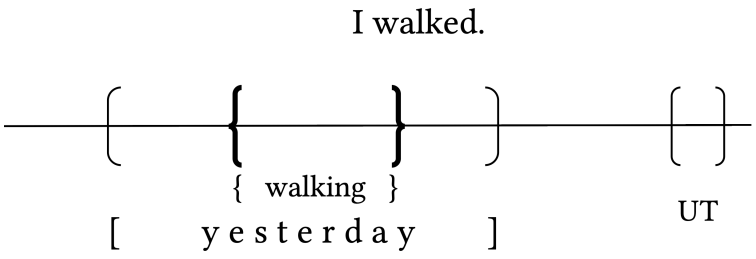

Figure 5.12: Timeline of the English past tense

The marker *su* is analyzed as perfective by Thieberger (2006), which conforms to its appearance

in contexts that can be characterized as expressing either anteriority (78)-(79) or boundedness that advances narration (80)-(81). It cannot be used with events ongoing at the utterance time (82). As we can see, in the meaning of anteriority *su* co-occurs with the perfect (78)-(79) and in denoting the boundedness in sequences it co-occurs with the general subject marking (80)-(81).

(78) Context: Why wouldn't you be happy if I had chosen to marry Adam? (TFS, 2010)

nlaken kineu kai=pe lak skot Adam ***su***
because 1SG 1SG=PRF marry with Adam PFV
'Because I had been married to Adam.' (AK1-018-01, 00:20:12.185-00:20:18.821)

(79) *malnen p̃a=ler mai me kai=pe mtir leta* ***su***
as 2SG.IRR=return come and 1SG.PRF=PRF write letter PFV
[Talking to someone who is leaving in a while] 'When you return, I will have written this letter.' (Thieberger 2012:392, based on Dahl 1985:TMAQ 107)

(80) *ra=na ra=marmar* ***su*** *ra=tuleg me ra=mer talm̃at.*
3DU=then 3DU=rest PFV 3DU=get.up but 3DU=again garden
'after they rested, they got up and went back to the garden.' (AK1-027-01, 00:11:29.965-00:11:34.465)

(81) Context: retelling the day from a vacation (Underhill & Cable, 2015)

Pulp̃og a=pilo, a=pan los ***su****, a=taf nen ka=fan pag bus.*
morning 1SG=wake.up 1SG=go wash PFV 1SG=exit COMP 1SG=go.IRR climb bus
'In the morning, I woke up, I had a bath, I went out to catch a bus.' (AK1-019-01, 00:36:57.310-00:37:16.613)

(82) *i=pen matur malfane* ****su****.*
3SG=there sleep now PFV
'He is sleeping there.' (AK1-086-01)

The perfective *su* can also mark termination of activities, which otherwise do not have an inherent endpoint, as shown in (83), see also (80) and (81) above. However, with accomplishments *su* does not necessarily mark a completion of the event. This is shown in (84), in which we get the interpretation that the object of eating is not completely affected. Singh (1998) calls this type of perfective a *neutral perfective* which "like the standard perfective, it presents an event as a whole. However, in contrast with the standard perfective, it does not require that the event be completed" (Singh, 1998:173).[18]

(83) Context: It rained, it stopped and you refer back to the rain.

Uus ki=pe wo ***su****.*
rain 3SG.PRF=PRF rain PFV
'It had rained.' (AK1-119-01)

(84) *kai=pe paam cake na* ***su*** *me nakon i=tu*
1SG.PRF=PRF eat cake:BI that PFV but half 1SG=stay
'I have eaten the cake, but there is half left.' (Lionel Emil, 11/02/2019)

[18] See also Pearce (2015b) who distinguishes the perfective and terminative aspect in Unua.

The perfective *su* is compatible with the perfect *pe* in almost all of its perfect functions, including the experiential (85) and the resultative (86), but not the function of change of state. In fact, *su* is not used with states marked by the perfect,[19] as shown in (87a) for the meaning of change of state and (88a) for the experiential meaning. In these cases speakers prefer to use *pei*, as shown in (87b) and (88b), respectively. Although it is not yet clear to which extent *su* can or cannot combine with states in general, its dispreference to occur with states can be related to the fact that the perfective aspect is incompatible with states in some languages, such as Mandarin Chinese and Navajo [nav] (Smith, 1997:66).[20]

(85) *Kineu **kai=pe** pag-ki ntaf i=skei **su**.*
1SG 1SG.PRF=PRF climb-TR mountain 3SG=one PFV
'I have climbed a mountain.' (AK1-147-04, 00:00:57.590-00:01:01.796)

(86) *Kineu **kai=pe** maa ntal **su**.*
1SG 1SG.PRF=PRF grate taro PFV
'I have grated the taro.' (AK1-146-02, 00:02:32.335-00:02:41.410)

(87) a. ??***ki=pe** mam **su**.*
3SG.PRF=PRF ripe PFV
Intended:'[the fruit] it has (already) become ripe' (Lionel Emil 14/02/2019)

b. ***ki=pe** **(pei)** mam.*
3SG.PRF=PRF first ripe
'[the fruit] it has (already) become ripe' (Lionel Emil 14/02/2019)

(88) a. ?*Nasum̃ neu **ki=pe** miel **su**, me ki=pe tap miel malfanen mau.*
house 1SG.POSS 3SG.PRF=PRF red PFV but 3SG.PRF=PRF NEG1 red now NEG2

b. *Nasum̃ neu **ki=pe** **pei** miel, me ki=pe tap miel malfanen mau.*
house 1SG.POSS 3SG.PRF=PRF first red but 3SG.PRF=PRF NEG1 red now NEG2
'My house has been red before, but it's not red anymore.' (Lionel Emil, 04/02/2018, based on Koontz-Garboden 2007:142)

If we compare the meaning of *su* and the perfect aspect through their co-occurrence, we can conclude that *su* is compatible with most perfect functions. However, *su* does not contribute semantically to determining these perfect meanings; instead it simply co-occurs with them because its perfective semantics is compatible with these perfect meanings. We can represent this in a semantic map of perfect functions and its relation to perfectivity in Figure 5.13. As we can see, the marker *su* is compatible with all perfect functions except the change of state, due to its perfective meaning. The meaning of perfectivity is placed next to the anteriority, which is one of the most frequent perfect functions with which it co-occurs.

The semantic map in Figure 5.13 can be compared to the situation in English represented in

[19] The occurrence of *su* with states marked by the perfect might be accepted in some other contexts, such as in anteriority readings, but this was not investigated in great detail here.

[20] As Smith (1997:66, 67) puts it: "The span of the perfective includes the initial and final endpoints of the situation.[...] As such it does not apply to stative situations, because endpoints do not appear in the temporal schema of a state." For the case of the Mandarin Chinese perfective, see also Soh (2009).

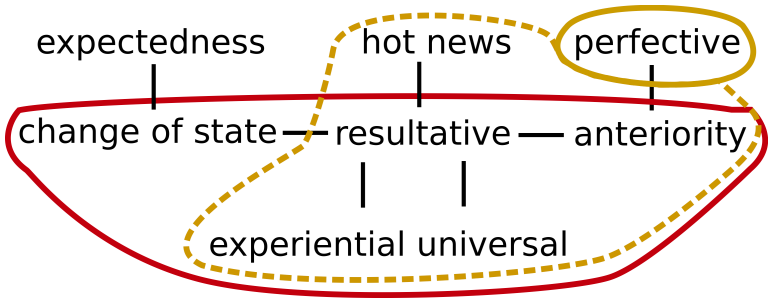

Figure 5.13: Semantic map of the Nafsan perfect in red and the perfective *su* in dashed yellow outline signalizing the perfect functions with which it combines

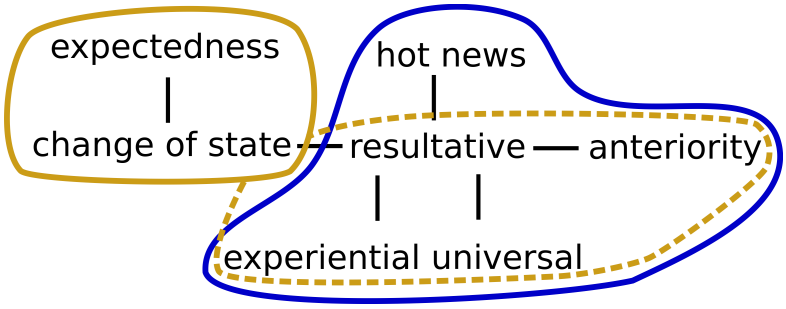

Figure 5.14: Semantic map of the English perfect in blue and the English 'already' in yellow (full outline: core meanings, dashed outline: perfect meanings with which it can combine)

Figure 5.14. We can see that 'already' also combines with many perfect meanings, and in each of these combinations it maintains its original semantic and pragmatic contribution of change of state and expectedness. We can exemplify this with (89) in which the experiential meaning comes from the perfect aspect and the meaning of "earlier than expected" and change of state is triggered by 'already'.

(89) I have already been to Paris.

This situation in which there is a large area of overlapping environments between two aspectual markers, but different core meanings can easily lead to problems in description: which of these two markers has perfect aspect as its core meaning? This problem is of particular importance for the iamitive proposal. Most languages proposed to have iamitives by Olsson (2013) have several markers that are compatible with perfect meanings. For example, this is the case of Mandarin Chinese which has a number of aspectual markers: perfective post-verbal *le* (Smith, 1997; Soh, 2009), "iamitive" clause-final *le* (Olsson, 2013), experiential[21]/discontinuous[22] *guo*, completive *wan* (Smith, 1997:73), and *yijing* 'already' (Dahl & Wälchli, 2016). In a language with such a high number of perfect-like markers, it is of crucial importance for any analysis to consider whether these markers are in a

[21] According to Olsson (2013).
[22] According to Smith (1997).

relationship of paradigmatic contrast or whether they can combine in specific environments. As I have shown in the case of Nafsan: a) the extent of meanings expressed by the perfect are influenced by contrasts with other markers (Section 5.3.1), and b) there are other aspectual markers which might appear to behave like the perfect (*su* in Nafsan), but are in fact simply compatible with certain perfect meanings. In the case of iamitives, it remains to be answered whether some of the markers labeled as such are in fact perfect markers, or markers with non-perfect core meanings which happen to occur in some perfect environments, such as *su* in Nafsan or 'already' in English.[23]

5.4 Conclusion

In this chapter I analyzed different readings of the perfect aspect in Nafsan, which can all be derived from its definition of placing the TT in the posttime of TSit. These perfect readings were analyzed in comparison to the functions of English perfect, 'already' and the proposed iamitive category. The analysis of past, present, and future perfect functions in Section 5.2.1 showed that Nafsan does not have adverbial restrictions with perfect in the same sense as the English perfect. Since Nafsan is a tenseless language, the perfect can easily be interpreted with any temporal reference. Thus, although past temporal adverbials are incompatible with present perfect readings, in the presence of a temporal adverbial with perfect in Nafsan, it is possible to reinterpret it as the past or future perfect. In this case, the temporal adverb is interpreted as being in TSit and another contextually available reference point, posterior to TSit, is the TT where the posttime of the event is situated. This observation has important consequences for the expected behavior of the perfect in tenseless languages. Crucially, the co-occurrence with temporal adverbials is not necessarily a sign that we are not dealing with the category of perfect. These co-occurrences might be restricted to the interpretation of the past and future perfect.

The analysis of the meaning of change of state in Section 5.2.2 showed that states marked by perfect in Nafsan are aspectually coerced into changes of states. When the resultative perfect combines with states in Oceanic languages, its semantics requires there to be a dynamic event leading to the result state, which causes the aspectual coercion of states into changes of state. Cross-linguistically, there might be several factors that make Nafsan and other Oceanic languages likely to have a change of state interpretation with perfect-marked states. Koontz-Garboden (2005) found that only in languages where states are lexicalized as verbs and not adjectives, as is the case in Oceanic languages, these verbs can be used with both stative and change-of-state meanings. Thus, since the meanings of change of state are not marked derivationally and stative verbs can be coerced into changes of state in certain contexts, perfect aspect is just another context where the aspectual coercion is possible.

Section 5.2.3 argued that the meaning of expectedness is not expressed by the Nafsan perfect and that duality effects with the Nafsan perfect are caused differently from 'already' in English. Regarding the duality effects, firstly, the perfect *pe* cannot combine with *ta* 'still' because they occupy the same syntactic position, which explains the lack of 'still not/not yet' and 'still' meanings with perfect. The second duality effect has to do with the meaning of 'not anymore' which arises only when the

[23]For a similar point about distinguishing 'already' from the perfect aspect see Vander Klok & Matthewson (2015).

posttime of a change of state is negated. This duality effect is a consequence of the aspectual coercion into a change-of-state meaning which implies that the negated posttime did hold prior to the change of state. Regarding the meaning of expectedness proposed to characterize iamitives, I have shown that this meaning can arise in different contexts in Nafsan (and even in English), regardless of the aspectual marker being used, and is thus not a good predictor of any aspectual category.

In Section 5.3.1 I argued for the importance of considering paradigm effects when discussing which functions are "expected" from the perfect category in a given language. I showed that the 'hot news' meaning in Nafsan is not expressed by the perfect because the prospective *po* has that function, which blocks the perfect *pe* from those uses. This means that positing new categories in order to explain lack of certain functions of perfect, as is the case with iamitives, can be avoided if we consider the paradigm effects in those languages.

In Section 5.3.2, I showed that it is important to make a distinction between *having* certain meanings and *being compatible* with certain meanings. In the aspectual domain it is often the case that different aspectual markers can be combined and the separation of their semantic contributions might not be trivial. Just as *su* is a perfective marker compatible with certain perfect meanings in Nafsan, the aspectual markers called "iamitives" might in fact be simply compatible with certain meanings of perfect or 'already', while their core meanings belong either to the perfect, 'already', or some other aspectual category.

The four main arguments made in Sections 5.2.1, 5.2.2, 5.2.3, and 5.3.1 evidence that specific "unexpected" meanings of the perfect can be derived successfully without positing the iamitive category, and Section 5.3.1 argues that some functions of perfect might be absent because of paradigm effects and not because they represent a different TMA category. Iamitives are semantically broadly defined by the change of state meaning that differentiates it from "ordinary" perfects (Olsson, 2013). The change of state meanings are taken to originate from the meaning of 'already' as the diachronic source of iamitives, and other iamitive functions stem either from the resultative perfect or 'already'. This means that other perfect functions such as experiential or anteriority readings are excluded from its definition as a typological gram. In the case of Nafsan we have seen that neither the change of state meaning nor duality with perfect are semantically related to 'already'. Separate language-internal processes, such as aspectual coercion, and possibly lack of change-of-state morphology lead to such interpretations of perfect-marked verbs. This speaks against the iamitive proposal which takes the change-of-state meaning as the defining meaning of that category, because its existence does not seem to predict the cluster of iamitive functions.

Lastly, Klein's (1994) semantic definition of the perfect aspect as placing the TT in the posttime of TSit is a good candidate for a typologically valid TMA category. In contrast to other proposals for the semantics of perfect, this definition successfully relates the meanings of the past, present, and the future perfect. The case study of Nafsan showed us that the availability of these three meanings with the same construction might be more typologically relevant than previously thought. As mentioned in Chapter 4, different meanings of the English perfect have often been analyzed as polysemous and the present perfect has been taken as the model for the semantics of the category of perfect cross-linguistically. However, the Nafsan perfect brings new evidence for different interpre-

tations of perfect in tenseless languages: it has the readings of the present perfect as well as the anteriority readings with past and future references, which would be triggered by the past and the future perfect in English as a tense language. Thus, Klein's (1994) unifying semantic definition of the perfect meanings needs to be considered as a possible cross-linguistically valid definition of the perfect aspect.

The main conclusion about the Nafsan perfect is that all its readings analyzed in this chapter are instantiations of the same semantic definition of the perfect aspect (placing the TT in the posttime of TSit) (Klein, 1994). Moreover, the study of the Nafsan perfect showed us that the differences attested between perfects across languages can often be explained by specific processes operating in their systems and are not necessarily related to different semantic definitions of perfect.

Chapter 6

Perfect in Oceanic languages

6.1 Introduction

In this chapter I study the semantic space of categories described as perfect/iamitive/'already' in descriptions of several Oceanic languages through the semantic map of the perfect proposed in Section 6.2.2. I argue that the configurations of meanings of these categories in analyzed Oceanic languages offer evidence against the cross-linguistic validity of the proposed iamitive semantic space, which confirms the conclusions of the analysis of the Nafsan perfect presented in Chapter 5.

The motivation for the study carried out in this chapter is the question of whether the proposed functions of iamitives can be cross-linguistically attested, and whether the meaning of change of state as their core function can predict the spread of iamitive functions. As discussed in Section 4.2.2, the proposed core meaning of iamitives is the change-of-state meaning (Olsson, 2013), which is intended to uniquely identify iamitives as a separate category from the perfect. Moreover, iamitives are defined as lacking the experiential, universal, and anteriority functions, which are present in the English-style perfect. Although the comparison between iamitives and the perfect is not explicitly done by Olsson (2013), he mentions that iamitives do not express experiential meanings, and Dahl & Wälchli (2016) note that the universal perfect is typically found in European perfects and not in iamitives. The reference to the anteriority meaning, equivalent to the meaning of the English past perfect, is excluded from both Olsson's (2013) and Dahl & Wälchli's (2016) analysis of iamitives. This suggests that anteriority is not considered to be a feature of iamitives.

In Chapter 5 I discussed several types of evidence against the cross-linguistic validity of this definition of iamitives, based on the case of *pe* in Nafsan. In this chapter I focus on the cross-linguistic validity of the semantic space which is said to be occupied by iamitives. As we saw in the case of Nafsan, the meanings expressed by *pe* include change of state, which would be a iamitive-defining meaning, but also other meanings typically associated only with the perfect aspect, such as experiential, universal, and anteriority meanings. This poses a challenge for the definition of iamitives as denoting a change of state and excluding experiential, universal, and anteriority meanings. In order to test this type of behavior of perfect/iamitive/'already' markers in other Oceanic languages, I created a semantic map of the perfect/iamitive/'already' meanings and studied their distribution

in a convenience sample of Oceanic languages, for which sufficiently detailed semantic analyses of perfect are available.

Another aspect I discuss in this chapter is the importance of paradigm effects for explaining why certain meanings are *not* expressed by a given TMA marker. As shown in Section 5.3.1, the 'hot news' meaning in Nafsan is not expressed by the perfect marker because there is another marker that is used for expressing that meaning. The study in this chapter shows that this pattern is also common in other Oceanic languages.

This chapter is organized as follows. In Section 6.2 I make a proposal for a semantic map of the perfect and in Section 6.3 I analyze the semantic space of perfect/iamitive/'already' meanings in several Oceanic languages. I take my findings to argue against the cross-linguistic validity of the definition of iamitives in Section 6.4.

6.2 The semantic map of the perfect

6.2.1 Previous semantic maps of the perfect

In order to facilitate comparison between perfect and related categories in Oceanic languages I created a semantic map with different functions of perfect attested in a convenience sample of Oceanic languages (for definition and theoretical aspects of semantic maps see Section 3.4). In this section I discuss different semantic maps that have been proposed in the literature for the perfect aspect and I motivate the need for creating a new classical perfect's semantic map that interacts with different cross-linguistic meanings presented in Section 4.2.

There have been several proposals for perfect's semantic map in the literature so far. To the best of my knowledge the only classical semantic map proposed in the literature is Anderson's (1982) semantic map of the perfect based on English, Mandarin, Turkish, Akkadian, and Arabic. Anderson (1982) centers the perfect meaning around the notion of "current relevance" and identifies the following core functions of perfect: intransitive result-state, current relevance of anterior, new situation (hot news), experiential, anterior continuing (continuous), and anterior. Anderson (1982) identifies two functions which have not been mentioned in this work: the intransitive result-state refers to cases like *he is gone* (Nedjalkov, 1988) and the current relevance of anterior refers to cases like *he has studied the whole book (so he can help)* (Anderson, 1982:228), both of which I call the *resultative* meaning of perfect. These meanings are represented in Anderson's (1982) semantic map of perfect in Figure 6.1. The full oval outline comprises the meanings of the English perfect and the dashed outline comprises the meanings of three Mandarin perfect-like categories. The three Mandarin categories refer to, reading from top to bottom and from left to right, sentence-final *le*, *guo*, and verb-final *le*. Anderson (1982:237) concludes that the Mandarin sentence-final *le* emphasizes the meaning of current relevance (C-R in Figure 6.1) and is much more closely tied to the present reference than the English perfect, which can also express regular anterior and experiential meanings without encoding current relevance. In comparison to proposed iamitive functions, we can see that Anderson's (1982) semantic map includes C-R new situation which refers to the meaning of change of state and C-R

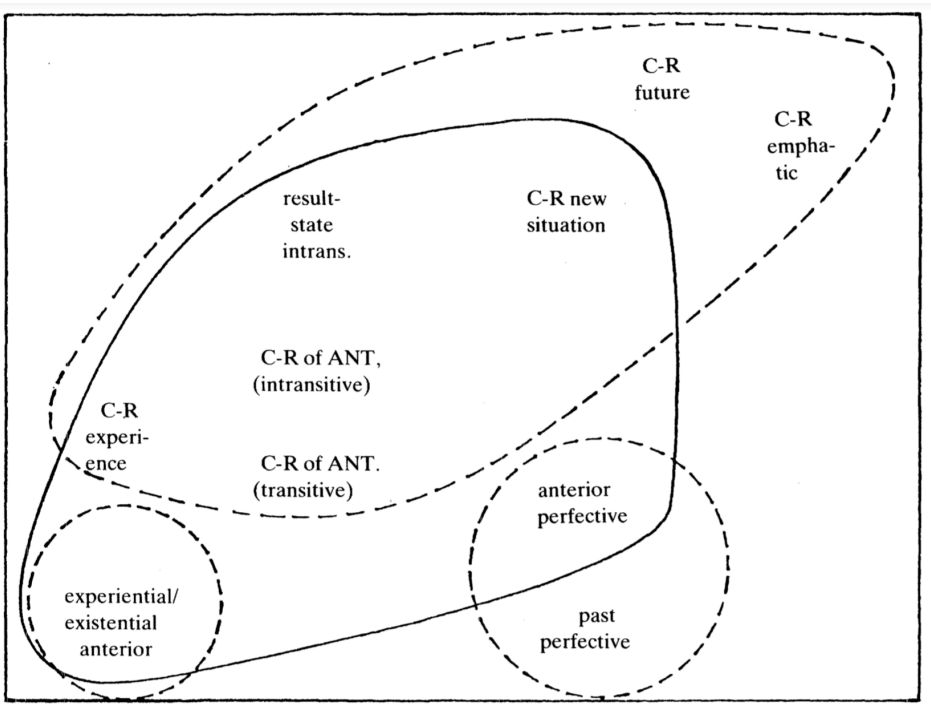

Figure 6.1: Anderson's (1982) semantic map of the perfect with the English (full outline) and Mandarin perfects (dashed outline), C-R = current relevance, ANT. = anterior

future which roughly corresponds to the immediate future reading.[1] Regarding expectedness in the sense of iamitives, Anderson (1982) relates the meaning of a new situation to an unexpected event, or "C-R of unprepared mind". This refers to cases in which the subject discovers something or comments on something that surprised them or came to their attention (Li et al., 1982:31). This meaning is the opposite of what is proposed for iamitives, in which the event is interpreted as expected or having happened earlier than expected (Olsson, 2013). In fact, Olsson (2013:27-31) also analyzes the Mandarin sentence-final *le* as a iamitive involving less strong expectations than other iamitives in his study. Anderson's (1982) proposal anticipates many perfect meanings addressed in this work, including the meanings related to 'already' and iamitives. However, Anderson (1982) does not offer a proposal on the semantic space of 'already' and its relation to the perfect. He also assumes that the Mandarin sentence-final *le* is a perfect, and not a different kind of perfect. Thus, the objective of making my own semantic map is to address these recent debates which focus of the relationship between 'already' and the perfect, as well as the validity of iamitives as a cross-linguistic category with specific functions.

The semantic space of perfect aspect has also been explored through "proximity maps" (see Section 3.4), which are created on the basis of parallel corpora. Dahl (2014b) and van der Klis et al. (2017) created these types of maps for the perfect in European languages and Dahl & Wälchli (2016) for the perfect and iamitives in the languages of the world represented in the parallel Bible corpus. The only

[1]For Anderson (1982:235), the C-R emphatic refers to correcting a wrong assumption and closing a statement.

proximity map that bears relevance to the discussion in this chapter is the perfect/iamitive map by Dahl & Wälchli (2016). Dahl & Wälchli (2016) constructed a grammatical space of 305 perfect and iamitive grams from the parallel Bible corpus, by means of Multidimensional Scaling. By comparing the distribution of different iamitive/perfect-like markers in Bible translations, they identify three extreme points or clusters of grams in their data, European, Indonesian, and Philippine, as shown in Figure 6.2. The forms meaning 'already' also form a cluster but their frequency is too low to appear on the map in Figure 6.2 (Dahl & Wälchli, 2016:333). However, most data points are placed in between these clusters, in the perfect/iamitive continuum (Dahl & Wälchli, 2016). Since the theoretical approach by Dahl & Wälchli (2016) to the semantics of perfect and iamitives is diachronic, they understand the relationships between these clusters as representative of grammaticalization paths of 'already' into iamitives and iamitives into perfects, defined respectively as "one which involves uses in natural development contexts with mainly stative predicates, and one which involves an increase mainly with dynamic predicates, causing iamitive grams to be more similar to European-style perfects" (Dahl & Wälchli, 2016:326).[2] As Dahl & Wälchli (2016) point out, the advantage of this map (Figure 6.2) is that prototypical uses of gram types[3] can be established on the basis of data without a prior semantic definition. Although this approach provides a good cross-linguistic overview of the distribution of grammatical categories, it still features two main problems when it comes to semantics: a) the choice of the semantic definition of the "prototypical" categories (and their identification) in the map remains dependent on linguist's theoretical approach and is minimally determined by the map itself, and b) it cannot deal with any language-specific problems, as it is not intended to do so, and c) this method only compares translational equivalents in the parallel Bible corpus, without targeting any specific semantic contexts which might be decisive for determining linguistic categories. Regarding these problems, we see in Figure 6.2 that despite the extreme categories identified as European, Indonesian, and Philippine, most data points are situated somewhere in between these categories. Thus, for most languages represented in the graph there are no clear cut-off points between perfects and iamitives. For that reason, deciding on individual-language categories must be informed by some theoretical definitions of perfects and iamitives as distinct categories. However, as already argued in Chapter 5, the definition of iamitives as being defined by the meaning of change of state is not viable because it wrongly predicts that a marker with that meaning should not have other "European" perfect meanings, such as experiential and universal. In contrast, the semantic definition of perfect paired up with language-internal semantic and pragmatic processes can be flexible enough to accommodate the meaning of change of state as a perfect function. In order to test the relation of the meaning of change of state with iamitives and the perfect as grammatical categories on Oceanic languages other than Nafsan I propose a classical semantic map of the perfect/iamitive semantic space in the following sections and I apply it to individual Oceanic languages. The main advantage of a classical semantic map is that it can relate language specific-meanings to proposed

[2] It is not clear what is meant by "increase mainly with dynamic predicates", because all the languages studied in this chapter, as well as all the languages studied by Olsson (2013) already use the perfect/iamitive markers with dynamic predicates.

[3] "Gram type" refers to cross-linguistically attested clusters of grams (Dahl & Wälchli, 2016).

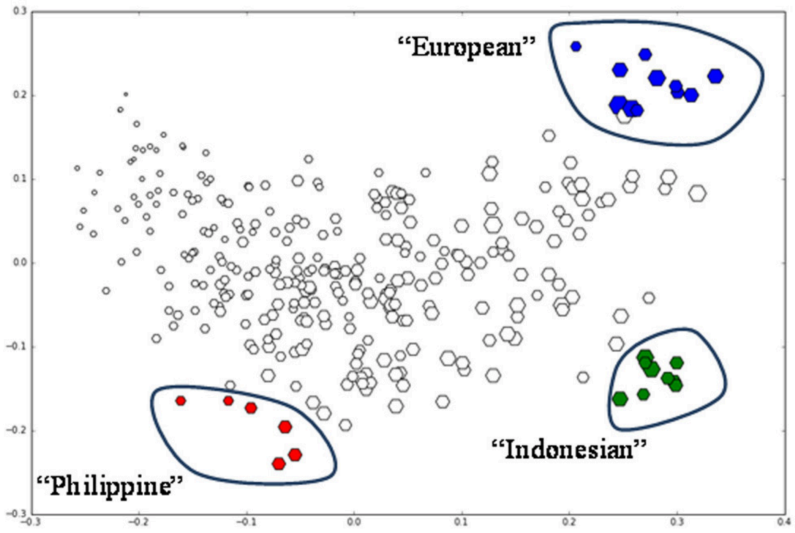

Figure 6.2: From Dahl & Wälchli (2016): "Philippine iamitives (red), Indonesian iamitives (green) and European perfects (blue) as extreme clusters in the grammatical space of perfects and iamitives"

cross-linguistic meanings and categories.

6.2.2 Proposal for the semantic map of the perfect

In this section I propose a classical semantic map of the perfect and describe the relationships between the meanings it contains.

Before presenting the semantic map, I discuss how the classical semantic map of the perfect presented here relates to Anderson's (1982) semantic map discussed in Section 6.2.1. The perfect meanings distinguished by Anderson (1982) coincide to a large extent with the perfect meanings in the semantic map proposed here. The differences are mainly due to his focus on different grammatical categories and different languages. For example, Anderson (1982) maps the meaning of perfect in relation to other categories such as passive, "ethical dative",[4], perfective, and others. For this reason, he differentiates "C-R of anterior" from "intransitive result state" and "anterior perfective". My semantic map focuses on the core meanings of perfect in relation to the core meanings of 'already' and iamitives, without going into detailed peripheral meanings associated with other categories such as passive or perfective (for my proposal for the relationship between perfective and perfect, similar to Anderson (1982), see Section 5.3.2). In comparison to Anderson's (1982) map, some perfect meanings in my semantic map use different names to refer to the same or similar concepts, such as "change of state", which is called "new situation" by Anderson (1982). The only major difference is that I do not use the concept of current relevance. As can be seen in Chapters 4 and 5, the semantics of perfect can be successfully modeled by positing a basic resultative/anteriority-based definition of placing the TT in the posttime of TSit. Thus, I regard the current relevance meaning as a pragmatic effect that occurs with different meanings derived from this basic definition, and for that reason I do not

[4]These are the cases of the type *I had something wonderful happen tome today* (Anderson, 1982:232).

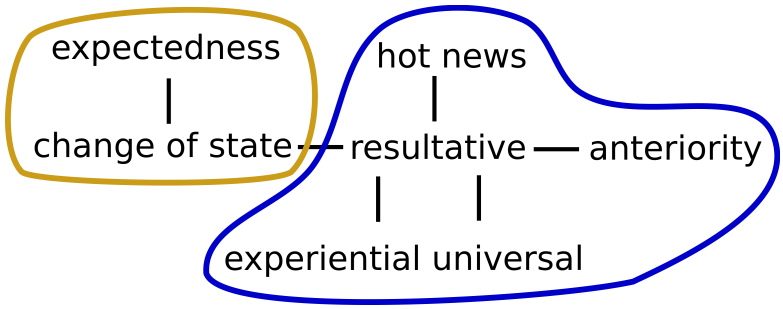

Figure 6.3: Semantic map of the English perfect in blue and the English 'already' in yellow

include it in the semantic map.

My proposal for the semantic map which includes the core meanings of the perfect, 'already' and iamitives is presented in Figure 6.3, where the English perfect and 'already are outlined. The links between different functions are based on proposed theoretical semantic relations between these meanings and on attested combinations of these meanings in Oceanic languages, presented in Section 6.3. Notice that the closeness of the meanings at the edges of the map that are not connected by lines is not intentionally determined. For instance, the meanings of expectedness and hot news are not thought to be necessarily semantically closer than anteriority and expectedness. The main claim of this map is the close semantic relationship between the resultative perfect meaning and the meaning of change of state, as supported by the theoretical background in Section 5.2.2. The only claim I make about other meanings is that they are peripheral and might eventually be related to other TMA categories. I do not wish to make strong claims about the particular connection of experiential, universal, and hot news meaning with the resultative meaning exclusively. Some of these meanings could also be semantically linked with the anteriority meaning. My intention is to show that in the perfect/iamitive/'already' semantic space the resultative meaning is more central than expectedness, experiential, universal, hot news, and anteriority meanings.

The proposed space of iamitive semantics is outlined in Figure 6.4. According to the iamitive definition, they combine the resultative and the change of state meaning, and optionally expectedness, to the exclusion of other perfect meanings. Notice that duality effects are not a part of the semantic map, as they do not represent a single meaning. At least some duality effects are an inherent way of how the change of state meaning interacts with negation, for instance the meaning of 'not anymore', as discussed in Section 5.2.3. Similarly, the meaning of immediate future is also not included in the semantic map, because it usually seems to arise in combination with modal markers (see Section 5.2.2), which indicates that the future reference is a component of the meaning of these modal markers and not the perfect itself. Nevertheless, this feature will be discussed for languages in the Oceanic sample in Section 6.3. If placed on the map, the meaning of immediate future could be connected to the meaning of change of state.

There are two caveats to keep in mind regarding the granularity of the meanings represented in this semantic map. The nodes in a semantic map should be differentiated only if there is at least one language in which that meaning is expressed by a single marker (Haspelmath, 2003). However,

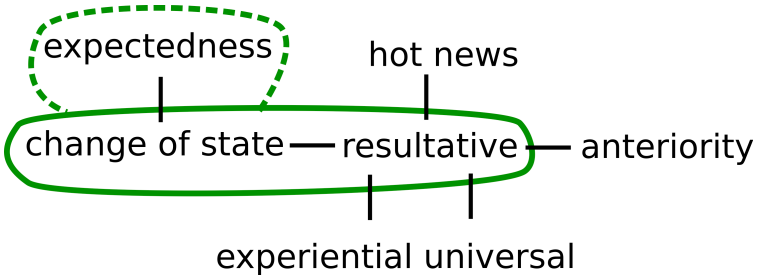

Figure 6.4: Semantic map of the proposed iamitive functions (Olsson, 2013)

in my map there are two meanings for which I have not found evidence of being expressed by a single marker, and these are the universal perfect and expectedness. The decision to keep these meanings as separate and represent them on the map is motivated by the fact that they are said to be perfect or iamitive meanings/functions, and their presence or absence in a given language has important consequences for deciding whether we are dealing with a perfect or a iamitive marker. These meanings also do not seem to be subsumed under other meanings or functions. The universal meaning should be kept as a node separate from other nodes because there are languages which do not express universal meanings with perfect, but express all the other meanings around it, such as experiential, resultative, and anteriority. This is the case in Niuean (see Section 6.3.4). Similarly, expectedness does not occur in all languages in which a given marker expresses the meaning of change of state. As a pragmatic effect, expectedness occurs only in some languages and it is often confined to certain contexts.

6.3 The Oceanic languages under study

6.3.1 Introduction

As mentioned in Section 3.4, the typological aspect of this work relies on analyzing TMA phenomena in Oceanic languages, which are relevant for the debates discussed in this work. In this case, the perfect aspect and related phenomena in Oceanic languages are analyzed in order to bring insight into the debate about the cross-linguistic validity of iamitives. I selected the Oceanic languages studied here based on the availability of clear evidence for the existence of perfect/iamitive/'already' meanings represented in my semantic map of the perfect. This type of evidence and sufficient language data was found for Toqabaqita (Lichtenberk, 2008), Niuean (Matthewson et al., 2015), Unua (Pearce, 2015a), and Māori (Bauer, 1993). Table 6.1 shows the languages together with their TMA markers analyzed in this chapter. They are also represented geographically in Figure 6.5. Several additional Oceanic languages were initially included in this study, but they had to be excluded because the analyzed markers were either not in the perfect/iamitive/'already' semantic space or there was not enough positive and negative evidence for the existence of certain meanings. Some of these languages were mentioned in previous sections, such as Koro (Cleary-Kemp, 2015), Nêlêmwa (Bril, 2016), Neverver (Barbour, 2012) and Daakaka (von Prince, 2015). The reason for not including the

languages from the MelaTAMP project in this sample has to do with the lack of evidence for specific categories to be situated in this semantic space. For instance, Daakaka has several markers which seem to be related to perfect/iamitive/'already', such as the change-of-state marker *bwet*, *wuk* 'already', *wet* 'only.then', and *dakap* 'just'. However, in the corpus and the storyboard data of Daakaka there is not enough evidence of the usage of these markers with the meanings represented in my semantic map of the perfect. One reason for this is the fact that the perfect storyboards I created for testing *pe* in Nafsan (Krajinović, 2018c,b) were not elicited in other MelaTAMP languages. The only storyboard aiming at perfect meanings which was elicited in other MelaTAMP languages is "Tomato and pumpkin" (von Prince, 2018f), but it did not produce sufficient occurrences of relevant TMA markers for a semantic analysis.

Table 6.1: The languages and their TMA markers studied in this chapter

Language	TMA marker	Label	Source
Toqabaqita	*naqa*	perfect	grammar (Lichtenberk, 2008)
Niuean	*kua*	perfect/inchoative	article (Matthewson et al., 2015)
Unua	*ju/ goj nu*	'already'/ 'FOC.already now'	grammar (Pearce, 2015a), corpus (Pearce, 2009)
Māori	*kua*	perfect	grammar (Bauer, 1993)

As shown in Table 6.1, the sources of language data are mostly published materials, such as reference grammars and articles, with the exception of Unua for which I also consulted the corpus available in PARADISEC. Since my analysis of these languages is based on published materials and not on carefully elicited data, as it was the case for Nafsan, I cannot easily account for language-internal properties that might influence the distributions of the studied markers. For instance, I cannot easily distinguish whether the studied marker has certain meanings or is simply compatible with certain meanings by co-occurring with other markers with those meanings, as argued for the Nafsan *su* in Section 5.3.2. I minimize this problem by focusing on the semantic distribution of a given marker and representing it on the semantic map, without assuming a specific semantic definition of the marker.

The markers in each language from Table 6.1 are analyzed against the meanings from the semantic map proposed in Section 6.2.2: resultative, anteriority, experiential, universal, hot news, change of state, and expectedness. Other considered features and effects are immediate future, imperative,[5] duality, occurrence with temporal adverbs, and presence of telic ambiguity. Table 6.2 shows all the functions and effects studied in this chapter, together with their occurrence with the perfect marker *pe* in Nafsan.

[5]The occurrence of perfect/iamitive/'already' markers in the context of imperatives was considered for reasons of completeness, because several authors reported this context as relevant for the markers in question.

Figure 6.5: Location of languages studied in this chapter

Table 6.2: Meanings expressed by the perfect in Nafsan (+ attested, ? unclear, - not attested, -/+ restricted to certain environments, e.g. needing to occur with another marker)

Meanings	Nafsan
Resultative	+
Anteriority	+
Experiential	+
Universal	+
Hot news	-
Change of state	+
Expectedness	-
Other effects	
Immediate fut.	-/+
Imperative	-
Duality	-/+
Temp. adverb	-/+
Telic ambiguity	-

6.3.2 Toqabaqita

Toqabaqita is a language spoken on the north of the island of Malaita in Solomon Islands and belongs to the Southeast Solomonic branch of Oceanic (Lichtenberk, 2008). According to the Ethnologue there were 12,572 speakers of Toqabaqita in 1999 (Eberhard et al., 2019). The perfect aspect in Toqabaqita is expressed by the postverbal marker *naqa*, which is analyzed by Lichtenberk (2008:709) as signaling "a new state of affairs at the time of reference".[6] The form *naqa* is occasionally reduced to the proclitic *na=* (Lichtenberk, 2008:709). The marker *naqa/na=* appears with all the typical perfect functions, such as resultative (1), anterior (2), experiential (3) and universal meanings (4).

(1) *Araqi-a e fula-toqo-ku* ***naqa.***
be.old.man-DVN 3SG.NFUT arrive-TEST-1SG.OBJ PRF
'Old age has caught up with me.' (A man speaking.) (Lichtenberk, 2008:710)

(2) *Nau ku manta-i-a s=o lae* ***naqa.***
1SG 1SG.NFUT think-TR-3.OBJ IRR=2SG.NFUT go PRF
'I thought you had gone/left.' (Lichtenberk, 2008:711)

(3) *Qo lae-toqo-na qerofulae qi* ***naqo?***
2SG.NFUT go-TEST-3.OBJ airplane LOC PRF
'Have you gone on an airplane before?' (Lichtenberk, 2008:711)

[6] An additional function of *naqa* is that of an intensifier (Lichtenberk, 2008:208).

(4) *Si manta-a qeri ku manta-i-a quu* ***na****=mai.*
PRTT think-DVN that 1SG.NFUT think-TR-3SG.OBJ ANTCONT PRF=VENT
'This thought I have had (lit.: thought) for some time now.' (Lichtenberk, 2008:718)

Similarly to the Nafsan *pe*, *naqa* is not used for the meaning of hot news, as shown by the agrammaticality of example (5). A possible reason for *naqa* not having this function is the usage of the immediate past/future marker *biqi* with this meaning, as shown in (6). The marker *biqi* expresses temporal immediacy that can refer to the immediate past or future (Lichtenberk, 2008). As discussed in Section 5.3.1, the availability of a marker like *biqi*, specialized for the particular meaning of hot news, can block the usage of a more general perfect marker, such as *naqa*.

(5) **Kera biqi lae na=kau.*
3PL.NFUT IMM go PRF=AND
('They have just left.') (Lichtenberk, 2008:711)

(6) *Kera* ***biqi*** *lae bo=kau.*
3PL.NFUT IMM go ASRT=AND
'They have just left.' (Lichtenberk, 2008:165)

Naqa also expresses the meaning of change of state, as shown in (7). In order to express the meaning of immediate future, *naqa* can combine with the expression 'be near to' and the future tense marking, as shown in (8) and (9). Lichtenberk (2008:717) notes that *naqa* can also be used in imperatives, as shown in (10) and (11).

(7) *Fanua e rodo* ***naqa****.*
place 3SG.NFUT be.dark PRF
'It is dark now. / It has gotten dark.' (Lichtenberk, 2008:712)

(8) *Nau karangi-a* ***kwai*** *fanga* ***naqa****.*
1SG be.near.to-3.OBJ 1SG.FUT eat PRF
'I am about to eat.' (Lichtenberk, 2008:682)

(9) *Nau* ***kwai*** *lae* ***naqa****.*
1SG 1SG.FUT go PRF
'I'll be going now.' (Said by a person getting up to go.) (Lichtenberk, 2008:716)

(10) *Weleqi, qoko mamalo* ***naqa****.*
man! 2SG.SEQ rest PRF
'Man! Take a rest now.' (Lichtenberk, 2008:717)

(11) *Sifo! Sifo* ***naqa****!*
descend descend PRF
'Get down! Get down now! (Ordering a little boy to climb down from a tree.) (Lichtenberk, 2008:717)

Regarding duality effects with negation, there is some indication in the Toqabaqita grammar that when *naqa* is negated with states it can receive the meaning of 'no longer/not anymore', as shown

in (12). However, with dynamic verbs it does not necessarily receive that interpretation (13).[7] The negative resultative in example (13) contrasts with example (14) which expresses the meaning of 'not yet' with the event not being expected to happen. In fact, Lichtenberk (2008:715) notes that *naqa* would be agrammatical in (14). Examples (12)-(14) show that Toqabaqita has some duality effects, but it is not clear whether they are generalized across all negative contexts with *naqa* or whether they are restricted to states, in which case they could be analyzed as a result of aspectual coercion as proposed in Section 5.2.3 for Nafsan. Regarding the meaning of expectedness, *naqa* does not seem to express expectedness or an earliness implicature in the examples shown so far and in (13) it has the opposite meaning that contrasts with expectedness in (14).

(12) *Kera araqi naqa.* ***Kesi*** *talaqa-na* ***naqa*** *raa-laa […]*
3PL.NFUT (married.couple)be.old. PRF 3PL.NEG fit-3.OBJ PRF work-NMLZ
'They [the speaker's parents] had grown old. They were no longer able to work […]' (Lichtenberk, 2008:1283)

(13) *Wane baa qe=****aqi*** *si fula* ***naqa****.*
man that 3SG.NFUT=NEGV 3SG.NEG arrive PRF
'The man has not arrived.' (And he is no longer expected to arrive.) (Lichtenberk, 2008:180)

(14) *Wane baa qe=****aqi*** *si fula* ***quu****.*
man that 3SG.NFUT=NEGV 3SG.NEG arrive still
'The man has not arrived yet.' (But he is still expected to arrive.) (Lichtenberk, 2008:180)

The last considered feature are combinations of the perfect *naqa* and past temporal adverbs. In Toqabaqita's grammar there is one example in which *naqa* co-occurs with the adverb 'yesterday' (15). However, in this example the perfect contributes to an avertive irrealis meaning, different from the present perfect in which adverbial restrictions are expected. Since this is the only example in the grammar in which 'yesterday' co-occurs with *naqa* instead of the general non-future marking, it is unclear what kind of status should be attributed to this co-occurrence of the perfect and the temporal adverb.

(15) *Nau kaa∼karangi-a sa kwai qaru bo=****naqa*** *qana keekene qi* ***roqo****.*
1SG RED∼be.near.to-3.OBJ IRR 1SG.FUT fall ASRT=PRF PREP breadfruit LOC yesterday
'I very nearly fell off the breadfruit (tree) yesterday.' (Lichtenberk, 2008:691)

By summarizing our findings we can outline the perfect functions in Toqabaqita in the proposed semantic map of the perfect in Figure 6.6. There are three main contributions of the study of the Toqabaqita perfect to our understanding of this semantic space: a) the Toqabaqita perfect expresses the meaning of change of state as well as other "typical" perfect function such as experiential, universal, and anterior, b) the specialized 'hot news/immediate' marker blocks the usage of the more general perfect marker, and c) expectedness is not encoded semantically by the Toqabaqita perfect.

[7] An open question remains about whether the implication 'no longer expected' given in the translation is somehow related to the duality effect that would yield the 'no longer' meaning.

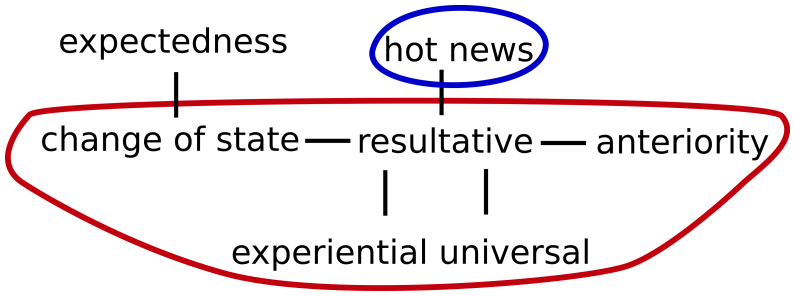

Figure 6.6: Semantic map of Toqabaqita with the perfect *naqa* in red and immediate marker *biqi* in blue

6.3.3 Unua

Unua is a language spoken on the south east coast of Malakula Island in Vanuatu (Pearce, 2015a) and belongs to the Central Vanuatu linkage (Clark, 2009). According to Pearce (2015a:2), Unua has approximately 1,053 speakers. Unua markers analyzed in this section are the postverbal particles *ju* 'already' and *goj* 'FOC.already' often followed by *nu* 'now'. The analyzed data is from the reference grammar (Pearce, 2015a) and the corpus of Unua (Pearce, 2009).[8] Pearce (2015a:320) analyzes *ju* and *goj* as denoting both perfective and perfect aspect, depending on their syntactic position. For Pearce (2015a), the perfective function of *ju/goj* typically yields the meaning of anteriority, as shown in (16), which is in contrast with the unmarked example (17) with a sequential reading. The main morphosyntactic difference between *ju/goj* and *goj nu* observed by Pearce (2015a:322) is the strictly clause-final position of *goj nu* (18) in contrast to *ju/goj* which can be in the post-verbal (16) and clause-final position. Pearce (2015b) also argues that the post-verbal *ju/goj* express the "perfective" aspect (16), and the clause-final particles express the perfect aspect (18). However, in my work anteriority is understood as a function of the perfect aspect, which can but does not need to be compatible with the perfective aspect (see Section 5.3.2). Moreover, Pearce (2015a,b) glosses *ju/goj* and *goj nu* as involving the meaning of 'already' and does not provide evidence of strictly perfective meanings other than what I call anteriority, associated with the postverbal position. For this reason, all these markers, regardless of their syntactic position, are considered here as possibly belonging to the perfect/'already'/iamitive semantic domain. However, the emphasis is placed on *ju*, which is more frequent[9] and is also a formative element of *goj* (*go* FOC + *ju*).[10]

(16) *Nano no-jbar-i aim go tue xina i-r-i* ***ju/goj*** *naur xeru.*
yesterday 1SG-reach-TR home and brother 1SG 3SG-write-TR already/FOC.already letter two
'Yesterday I arrived home and my brother had (already) written two letters.' (Pearce, 2015a:321)

[8] The examples from the corpus contain the reference identifiers from the corpus.

[9] In the Unua corpus there are 68 occurrences of *ju*, 38 occurrences of *goj*, and 15 occurrences of *goj nu*.

[10] The particle *goj* 'FOC.already' seems to originate from the fusion of the focus particle *go* and *ju* 'already' (Pearce, 2015b:15). The relationship between focus and 'already'/perfect meanings has also been attested in Lakurumau (Western Oceanic, PNG) (Mazzitelli, 2019), which is consistent with the focus properties of 'already' as per Krifka's (2000) analysis, see Section 4.2.1.

(17) *Nano no-jbar-i aim go tue xina i-r-i naur xeru.*
yesterday 1SG-reach-TR home and brother 1SG 3SG-write-TR letter two
'Yesterday I arrived home and then my brother wrote two letters.' (Pearce, 2015a:321)

(18) *Xini i-r-i naur* ***goj nu.*** *(*Xini i-r-i* ***goj nu*** *naur.)*
3SG 3SG-write-TR letter FOC.already now 3SG 3SG-write-TR FOC.already now letter
'He is writing a letter now./He has already written a letter.' (Pearce, 2015a:322)

Based on the study of the examples provided in the grammar and the corpus, *ju/goj* occurs with all the typical perfect meanings, including resultative, as in (19) and (20), anteriority, as in (16) and (21), universal, as in (22) and (23), and experiential (24).

(19) *Ale, ien xina motara Bongbae se Aulua i-mej* ***ju.***
alright here 1SG old.man Bongbae GEN Aulua 3SG-die already
'Alright, from here, a man, Bongbae from Aulua has already died.' (SA.04b.01.189)

(20) *Go mama se-n i-mej* ***goj.***
and mama GEN-3SG 3SG-die FOC.already
'And his mama is dead now.' (SW.05.60.039)

(21) *Go rraxum i-seb-rej rre xini i-mej* ***goj.***
and crab 3SG-NEG-speak NEG 3SG 3SG-die FOC.already
'But the crab did not speak, he had already died.' (XR.04.32.034)

(22) *Xini i-tebatin i-pur nangais* ***ju?***
3SG 3SG-start 3SG-cough when already
'For how long has he been coughing?' (Pearce, 2015a:233)

(23) *Tongo demej ro-tox rroni xini tue* ***ju*** *vena.*
PERS.the devil 3PL-stay with 3SG past already come
'The devils had been in him for a long time.' (Pearce, 2015a:325)

(24) *Go mende i-xa* ***ju*** *vex aim.*
and 1EXCL.PL 3SG-go already to village
'And we had already been to that village.' (SA.04b.01.205)

Similarly to the perfect aspect in Nafsan and Toqabaqita, *ju/goj* in Unua also does not express the meaning of hot news. The marker used to express that meaning is the inceptive *ber* (25), which can refer to the events in the immediate past (25) and future (26). In this respect *ber* is very similar to the immediate past/future marker *biqi* in Toqabaqita.

(25) *No-ke-i naus i-****ber****-us ma.*
1SG-see-TR rain 3SG-INCP-rain only
'I see it has just rained.' (Pearce, 2015a:229)

(26) *B-u-****ber****-xa bi-kiki mu?*
IRR-2SG-INCP-go IRR-little again
'Will you go soon?' (Pearce, 2015a:232)

Ju/goj also expresses the meaning of change of state with stative predicates, as shown in (27) and (28).

(27) *i-ve nevet i-matur* ***goj*** *raman.*
3SG-be stone 3SG-sleep FOC.already LOC.garden
'she had now become a stone asleep in the garden.' (WC.03.06.049)

(28) *Tuen [xina] i-vra-i: "Ii, no-kro* ***ju****. Rrarru!"*
other 1SG 3SG-say-TR yes 1SG-awake already 1INCL.DU
'And the other one said: Yes, I am awake. Let's go!' (NR.04.47.015)

When combined with the irrealis marking, *goj nu* can also express immediate future (29) and imperative meanings, as shown in (30).

(29) *B-u-xa* ***goj*** ***nu****?*
IRR-2SG-go FOC.already now
'Are you about to go?' [KB27/11/07] (Pearce, 2015a:327)

(30) *B-u-xa* ***goj*** *b-u-matur* ***nu*** *b-i-vena nen nga b-u-ngor∼ngor.*
IRR-2SG-go FOC.already IRR-2SG-lie.down now IRR-3SG-come NGEN COMP IRR-2SG-tire∼tire
'Go and lie down now before you get tired.' (Pearce, 2015a:327)

Regarding duality effects with negation, the meaning of 'not yet' is typically expressed by the structure NEG + 'still' (31) and the meaning of 'not anymore' can be expressed by the negation of *goj/ju* (32).[11] Interestingly, the meaning of 'not yet' can also arise when *goj/ju* is negated, as in (33). This shows that, just like in Nafsan and Toqabaqita, the duality effects do not necessarily arise with *goj/ju* in Unua.

(31) *Xamru mur-****seb****-rex* ***rrobb****? I-****jxe*** ***rrobb****.*
2DU 2DU-NEG-marry still 3SG-not still
'Aren't you married yet? – Not yet' [SS.04,05] (Pearce, 2015a:334)

(32) *no-****berax*** ***ju*** *be-re mur-b-ngar ien.*
1SG-not.want already 1SG.IRR-hear 2DU-IRR-cry here
'I don't want to hear you crying here anymore.' (Pearce, 2015a:282)

(33) *Naus ngo b-i-mirr* ***ju*** *go i-****jxe*** *tin.*
papaya the IRR-3SG-ripe already FOC 3SG-not very
'The papaya will not be very ripe yet.' (Pearce, 2015a:352)

Similarly to the duality effects, the meaning of expectedness seems to arise with *goj/ju* only in certain contexts. Example (34) with *ju* is produced in a context in which one devil repeatedly asks another devil if the moon has appeared. This repetition is indicated with *mu* 'again', which suggests that the appearance of the moon was expected in the discourse. However, in a different context, as in (35) where a boy found out his brothers were planning to kill him, *ju* is used to describe an event which

[11] There is another more frequent strategy for expressing 'not anymore', which involves the negation of the marker *mu* 'again' (Pearce, 2015a:328).

was surprising and unexpected from the point of the view of the narrative.

(34) *demej nga mavren i-ke mu i-vra-i: "Seser, navur nga nungon **ju**?"*
devil COMP other.side 3SG-call again 3SG-say-TR Seser moon COMP DEM.PROX2 already
'the devil man on the other side, he called again and said: Seser, is the moon up over there yet?' (DD.04a.01.011, DD.04a.01.012)

(35) *Go mokiki i-rivsa(i) **ju** seten nga tue-n rin re-m-vaxe.*
and boy 3SG-know-TR already what COMP brother-3SG PL 3PL-REL-plan
'And the boy had found out what his brothers were planning.' (GS.07a.08.056, GS.07a.08.057)

Regarding other meanings and restrictions, we saw a case of telic ambiguity in (18) with *goj nu*, but there is no clear evidence that the same ambiguity would be possible with *ju/goj* alone. I could also not find any conclusive examples with the occurrence of temporal adverbs with these markers.

With all the main meanings of the perfect/'already'/iamitive space having been discussed, we can now outline the meanings of *ju/goj (nu)* in the semantic map of the perfect proposed here. As we can see in Figure 6.7, the perfect/'already' and immediate markers in Unua occupy the same semantic spaces in the semantic map as the perfect and immediate markers in Toqabaqita. The perfect/'already' *ju/goj* denote the meanings of change of state, resultative, anterior, experiential, and universal, while the 'hot news' meaning is dedicated to the inceptive *ber*. As previously argued, the usage of *ber* for that particular meaning pragmatically blocks the usage of the more general *ju/goj (nu)*.

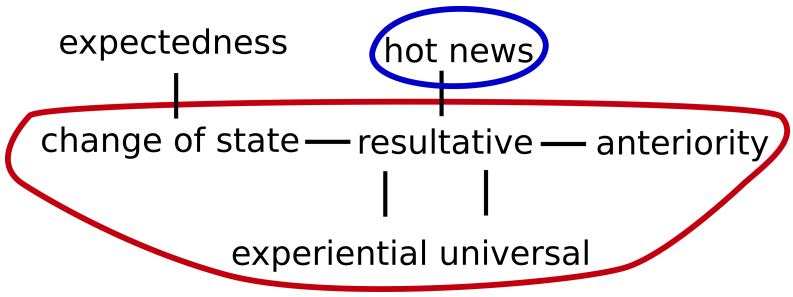

Figure 6.7: Semantic map of Unua with *ju/goj (nu)* '(FOC.)already (now)' in red and the inceptive *ber* in blue

6.3.4 Niuean

Niuean is a Polynesian language of the Tongic subgroup spoken on Niue and in diaspora in New Zealand (Matthewson et al., 2015). According to Ethnologue there are 5,910 speakers of Niuean in total (Eberhard et al., 2019). The Niuean marker studied in this section is the preverbal perfect marker *kua*, based on the study by Matthewson et al. (2015). Matthewson et al. (2015) analyze this marker as an inchoative marker which introduces the meaning of change of state and places it in the Perfect Time Span in Iatridou et al.'s (2001) approach (see Section 4.3 for a more detailed account). In this section I focus on the available meanings of *kua* in Niuean, based on the data and analysis from Matthewson et al. (2015).

Matthewson et al. (2015) show that *kua* can express most of the typical perfect meanings, such as anteriority (36), resultative (37), experiential (38), and hot news (40). However, *kua* cannot express the universal meaning, as shown in (39), where the grammatical expression of the universal meaning is unmarked and does not contain *kua* (39b). *Kua* is for the most part incompatible with past temporal adverbs, according to Matthewson et al. (2015),[12] as shown in (41).

(36) ***Kua*** *fitā he fano a Tom he mogo ne hoko au ke he fale haana.*
PRF be.already.done COMP leave ABS Tom LOC time NFUT arrive 1SG to LOC house 1SG.POSS
'When I got to Tom's house, he had already left.' (Matthewson et al., 2015:4)

(37) Context: Breaking up with someone.
Kua *oti tei e kapitiga ha taua.*
PRF finish recent ABS friend POSS 1DU.INCL
'Our relationship is/has finished!' (Matthewson et al., 2015:11)

(38) ***Kua*** *toli mouga nakai a koe?*
PRF climb mountain YNQ ABS 2SG
'Have you ever climbed a mountain?' (Matthewson et al., 2015:8)

(39) Context: I see your long hair and ask you how long it's been like that.

a. ***??Kua*** *loa (tei) e ulu haaku tali mai he tau 1980.*
PRF long recent ABS hair 1SG.POSS since DIR1 LOC year 1980
'My hair has been long since 1980.'

b. *Loa e ulu haaku tali mai he tau 1980.*
long ABS hair 1SG.POSS since DIR1 LOC year 1980
'My hair has been long since 1980.' (Matthewson et al., 2015:9)

(40) ***Kua*** *oti lā ia e vahega.*
PRF finish just DEM ABS class
'The class has/is just finished.' (Seiter, 1980:8)

(41) ***??Kua*** *fano a Tom ki Hawaii he* ***tau kua mole****.*
PRF go ABS Tom to Hawaii LOC year PRF pass
'Tom has gone to Hawaii last year.' (Matthewson et al., 2015:9)

Just like all Oceanic languages discussed so far, the Niuean perfect also expresses the meaning of change of state with states (42) and dynamic verbs which are activities, which can be interpreted as having been completed (telic) or in progress (atelic) when marked by *kua* (43). In contrast to activities, accomplishments and achievements marked with *kua* can only be interpreted as completed.

(42) ***Kua*** *ita tei a Malia.*
PRF angry recent ABS Mary
'Mary is angry/Mary has become angry.' (speaker's volunteered translations) (Matthewson et al., 2015:14)

[12] Matthewson et al. (2015:9) note that there is some variation in acceptability of certain temporal adverbs.

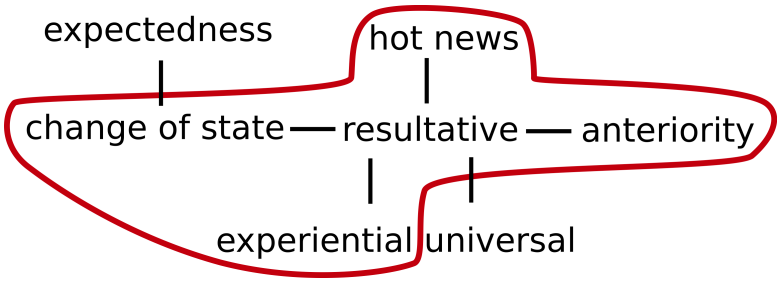

Figure 6.8: Semantic map of the perfect/inchoative *kua* in Niuean

(43) ***Kua*** *kai tei au.*
PRF eat recent 1SG
'I am eating.' or 'I've already eaten.' (Matthewson et al., 2015:16)

In combination with the particle *teitei* 'nearly', the usage of *kua* can also lead to the interpretation of immediate future, with the meaning of 'about to'.

(44) Context: Your friend rings you on the phone and asks you to come over. But you already have someone coming over to your house so you can't leave. You say 'My friend is about to arrive.'

Kua teitei *hoko mai (tei) e kapitiga haaku.*
PRF nearly arrive DIR1 (recent) ABS friend 1SG.POSS
'My friend is nearly here.' (Matthewson et al., 2015:18)

Regarding the meaning of expectedness, associated with iamitives, the Niuean perfect does not show any effects of this meaning. *Kua* is perfectly acceptable with completely unexpected events, as in (45).

(45) Context: You are at a family gathering and your cousin comes running up and says:

Kua *tō (tei) a Agukolo Bill he akau.*
PRF fall (recent) ABS Uncle Bill LOC tree
'Uncle Bill has fallen from a tree!' (Matthewson et al. 2015:18, adapted from Olsson 2013:24)

Duality effects are not analyzed in detail by Matthewson et al. (2015). However, they mention that *kua* cannot co-occur with *agaia* 'still' (46a) and that it is also not used with the meaning of 'not yet' (46b).

(46) Context: Talking about fruit.

a. ***(*Kua)*** *mata* ***agaia.***
(*PRF) unripe still
'It's unripe.'

b. ***Ai lā*** *momoho.*
NEG just ripe
'It is not yet ripe.' (Matthewson et al., 2015:14)

Now that all the relevant functions have been considered, we can create an outline of the meanings expressed by *kua* in our semantic map, as shown in Figure 6.8. We can see that *kua* expresses all the meanings associated with the perfect aspect, except for the universal meaning, which Matthewson et al. (2015) analyze as resulting from *kua*'s inchoative semantics. In comparison to the three Melanesian languages discussed so far, the Niuean perfect differs in two main respects; firstly that it can also express the meaning of hot news and secondly that it cannot express the universal meaning. In contrast to Toqabaqita and Unua, Niuean does not have a different marker used for 'hot news' which would contrast with the perfect. Thus, there are no paradigmatic blocking effects and perfect can also be used for the 'hot news' meaning.

6.3.5 Māori

Māori is a Central Eastern Polynesian language spoken on New Zealand by 148,000 people (159,700 total in all countries), according to Ethnologue (Eberhard et al., 2019). The analysis of the Māori perfect in this section is based on the data provided in the reference grammar of Māori by Bauer (1993).

Māori has a marker *kua* which is cognate to Niuean *kua* and can also be labeled as a marker of perfect aspect. Just like in Niuean, it is used to express all main functions of perfect, such as anteriority (47), experiential (48), universal (49), and the 'hot news' meaning (50).[13]

(47) *I taku tae·nga atu ki te kaainga,* ***kua*** *maoa kee i a ia ngaa kai*
at 1SG.GEN arrive.NMLZ away to the home PRF cooked CONTR CAUS PERS 3SG the(PL) food
'When I got home, he had already cooked the dinner.' (Bauer, 1993:421)

(48) ***Kua*** *tuutaki koe ki taku tuakana?*
PRF meet 2SG to 1SG.GEN brother
'Have you ever met my brother?' (Bauer, 1993:431)

(49) ***Kua*** *pau te haaora e mare∼mare ana*
PRF exhausted the hour T/A cough∼cough T/A
'He has spent an hour coughing.'/'He has been coughing for an hour.' (Bauer, 1993:432)

(50) ***Kua*** *haere kee ia*
PRF move CONTR 3SG
'He's just gone.' (Bauer, 1993:433)

Once again, *kua* also results in the meaning of change-of-state or 'beginning of a state' with states (Bauer, 1993:432), as shown in (51) and (52). Unlike Niuean, this change-of-state meaning does not arise with dynamic verbs which are activities, as shown in (53), which is interpreted as completed. In order to obtain a change-of-state meaning with activities, the verb *tiimata* 'start' must be used (Bauer, 1993:442), as shown in (54). This shows that Māori does not have the telic ambiguity that we saw in Niuean.

[13] Note that Bauer (1993:434) mentions that *kaatahi…ka* is "probably more common if the immediate past is stressed."

(51) ***Kua*** *moohio ahau i hee ia*
PRF know 1SG T/A wrong 3SG
'I know/I've realized she was wrong.' (Bauer, 1993:432)

(52) ***Kua*** *tangi te piana*
PRF sound the piano
'The piano has begun to play.' (Bauer, 1993:442)

(53) ***Kua*** *horoi raaua i te whare*
PRF clean 3DU DO the house
'They've washed the house.' (Bauer, 1993:442)

(54) *Ka* ***tiimata*** *raaua ki te horoi i te whare*
T/A start 3DU to the clean DO the house
'They started to wash the house.' (Bauer, 1993:442)

Similarly to Niuean, when *kua* combines with a marker meaning 'near', it can result in a meaning of immediate future, as shown in (55).

(55) ***Kua tata*** *mutu ia ki te peita i tana whare*
PRF near finished 3SG to the paint DO 3SG.GEN house
'He is about to finish painting his house.' (Bauer, 1993:432)

Bauer (1993) does not explicitly comment on the meaning of expectedness in relation to *kua* or duality effects with negation. The lack of contextual clues in the examples cited above also makes it hard to argue for either the presence or absence of these meanings. However, there is some indication that there might be some duality effects associated with perfect, namely the fact that the meaning of 'not yet' is expressed by the combination of the negation and the marker *anoo* 'again', without using *kua* (Bauer, 1993:418), as in (56).

(56) ***Kaahore anoo*** *te raa kia whiti*
NEG again the sun SBJV rise
'The sun is not yet up.' (Bauer, 1993:184)

Figure 6.9 outlines the meanings expressed by *kua* in Māori. We can see that the Māori perfect expresses all the meanings of the English-style perfect and the additional meaning of change of state. In the next section, I discuss the implications of attesting these particular meaning clusters for the debate about the semantic validity of iamitives.

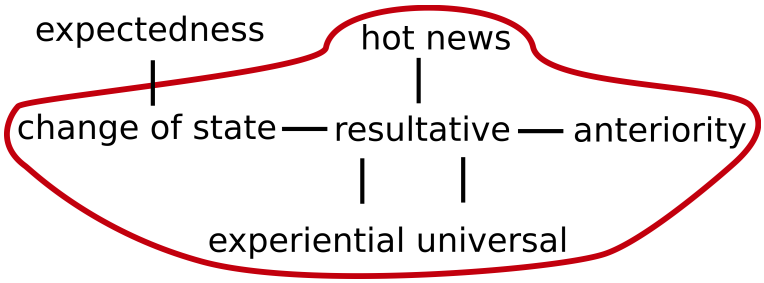

Figure 6.9: Semantic map of the perfect *kua* in Māori

6.4 Evidence against iamitives

In this section I summarize the observations about the semantic domain of perfect/'already'/iamitive and use these observations to argue against the validity of the proposed definition of iamitives as a new linguistic category. Firstly, it is important to stress that the argumentation against assuming the category of iamitives aims specifically at the semantic definition of iamitives as proposed by Olsson (2013) and Dahl & Wälchli (2016). In other words, I argue against the specific clustering of functions which is proposed to identify iamitives, with the main identifying function being the meaning of change of state. I also reiterate some of the arguments made on the basis of Nafsan, such as the paradigmatic effects of blocking, or the problem of associating iamitives with other meanings and effects, such as expectedness and immediate future.

Table 6.3: Perfect values in Nafsan and other Oceanic languages (+ attested, ? unclear, - not attested, -/+ restricted to certain environments, e.g. needing to occur with another marker)

Meanings	Nafsan	Toqabaqita	Unua	Niuean	Māori
Resultative	+	+	+	+	+
Anteriority	+	+	+	+	+
Experiential	+	+	+	+	+
Universal	+	+	+	-	+
Hot news	-	-	-	+	+
Change of state	+	+	+	+	+
Expectedness	-/+	-	-/+	-	?
Other effects					
Immediate fut.	-/+	-/+	-/+	+ (-/+)	+ (-/+)
Imperative	-	-/+	-/+	?	?
Duality	-/+	-/+	-/+	?	?
Temp. adverb	-/+	+/?	?	-	?
Telic ambiguity	-	?	+	+	-

Table 6.3 lists all the meanings expressed by the markers studied in this section together with Nafsan. The meanings expressed by the studied markers in all five languages are the resultative, anteriority, experiential, and the change of state. Other functions were attested to varying degrees. The universal meaning can be expressed by the studied markers in all languages except Niuean. We can see that these particular combinations of meanings do not correspond neatly to the meanings expected from a perfect, 'already', or a iamitive. However, as shown in Section 5.2.2, the marker that expresses the meaning of change of state together with other perfect functions can still be analyzed as a perfect marker. This can be achieved by a simple assumption that the change-of-state meaning is in fact the resultative perfect applied to states, which were then aspectually coerced into changes of state (see Section 5.2.2). On the other hand, given that all the analyzed markers express the meaning of change of state, we could also postulate that they are iamitives. The meaning of change of state is said to be one of the core meaning of iamitives, and also the main point of differentiation between the perfect aspect and iamitives (Olsson, 2013; Dahl & Wälchli, 2016). Moreover, iamitives are not expected to have anteriority, experiential, and universal meanings (Olsson, 2013; Dahl & Wälchli, 2016). The semantic map with proposed iamitive meanings is presented again in Figure 6.10 for convenience. If iamitives were uniquely defined by the change-of-state meaning, we would expect that whenever a given marker expressed the meaning of change of state and was frequent enough to be considered grammaticalized (Dahl & Wälchli, 2016), it would necessarily be a iamitive, which means it would have only the meanings presented in Figure 6.10. However, that is not the case in the five Oceanic languages analyzed in this work. All of these languages express the meaning of change of state as well as other perfect functions by a single marker. In other words, we do not find the clustering of the resultative meaning and the change of state to the exclusion of otherwise perfect functions like experiential, universal and anterior. The question is then how should we even differentiate iamitives from the perfect if the proposed core meaning of iamitives is not a good indicator of their difference. The decision of how to distinguish these two categories would be arbitrary. In the case of our five Oceanic languages they would all be either iamitives because of the change of state, or all perfects because of other functions. We can thus conclude that iamitives are not a useful category because their defining meaning of change of state does not predict a new semantic space which would be different from perfect and 'already'. Instead of positing the existence of the category of iamitives, the semantic space covered by the perfect aspect and 'already', which is represented by the semantic map proposed in Section 6.2.2, is sufficient to explain the clusters of these meanings in languages of the world. Choosing a restricted area within this space does not tell us anything new about the categorization of these meanings cross-linguistically. The relations between the perfect and 'already' meanings remain the same and iamitives do not add any new insight to our understanding of the interrelatedness of these meanings. So, when a marker in a given language covers more meanings than expected by the traditional category of perfect aspect, as is the case in all surveyed languages in this chapter, we can offer a theoretical solution to this puzzle, as for instance in Section 5.2.2 regarding aspectual coercion. It is important to keep in mind that the solution relying on aspectual coercion of states into changes of state is not simply explaining things away through theoretical reasoning. The basic assumption underlying the idea of aspectual coercion

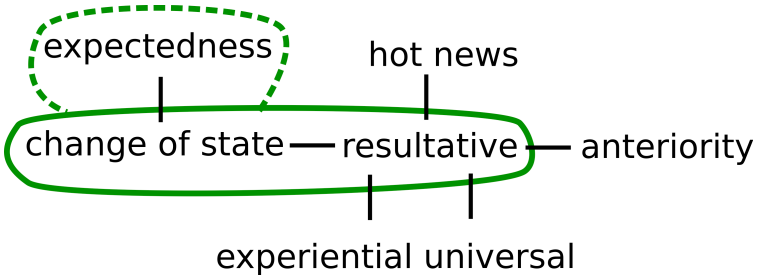

Figure 6.10: Semantic map of the proposed iamitive functions (Olsson, 2013)

is that languages which do not have rich morphology of lexical derivation, i.e. no dedicated change of state or inchoative morphology, behave differently when it comes to the interface of lexical and grammatical aspect. Thus, the existence of the change-of-state meaning is not an indication of a fundamentally different grammatical category, but is instead a result of the interaction of the perfect aspect and lexical aspect, which in many ways differs from well-studied Indo-European languages. For instance, the lexical aspect in Oceanic languages is often underspecified in comparison to Indo-European languages, leading to ambiguity in telicity in some languages, as in Unua and Niuean. The aspectual coercion of states is simply a process by which we theoretically model the fact that the semantic definition of states in some languages is more flexible than in Indo-European languages, in that the states are more easily interpreted as changes of state without undergoing any morphological changes. However, there is much more research needed to be done to fully flesh out these complex interactions between lexical aspect and the perfect in typologically diverse languages. Regarding the point about the validity of iamitives as a separate grammatical category, we can conclude that a simpler, and thus scientifically more attractive theory is to assume a smaller number of categories, perfect and 'already' in this case, which already accurately describe the relevant semantic space. The differences between languages in covering different parts of this semantic space can hardly be explained by positing yet another aspectual category. A simpler alternative is to analyze the effects of different parts of the language structure on the relevant category, as is the case with lexical aspect and perfect aspect in Oceanic languages. In fact, by dissociating the iamitive from the perfect, as a new category, we might offer a solution that inhibits trying to understand the factors which govern the cross-linguistic diversity of the perfect aspect.

Having established the main argument against the validity of iamitives, I turn now to the discussion of other meanings and effects. The meaning of expectedness, which was proposed by Olsson (2013) as associated with iamitives in some languages, was only occasionally found with relevant markers in Nafsan and Unua. The main finding, however, is that the interpretation of the studied markers in Nafsan and in Unua as involving expectedness is triggered only in certain contexts, and it does not seem to be a part of the semantics of the markers in question, as argued in Section 5.2.3 for Nafsan and Section 6.3.3 for Unua (examples (34) and (35)). Quite to the contrary, in Nafsan, for instance, the meaning of expectedness also arises independently of the perfect marker *pe* (see Section 5.2.3).

I also considered some other effects which are not a part of my proposed semantic map of perfect/'already'/iamitive. These effects are not a part of the map either because there is a lack of evidence of how these meanings relate to the meanings on the map or because they are not actual semantic meanings, but rather an effect or restriction associated with the usage of that marker in a specific context. The expression of immediate future, suggested to be a feature of iamitives by Olsson (2013), is expressed as a combination of an irrealis or future-referring marker and perfect[14] in all studied languages. However, languages differ in how this combination is realized formally. In Nafsan, the perfect marks the verb *to* 'stay' which then takes an irrealis complement clause. In Toqabaqita and Unua the postverbal perfect markers co-occur with the future and irrealis subject marking, respectively. There is also a certain level of uncertainty about whether the marker *kua* in Niuean and Māori necessarily combines with the marker meaning 'nearly' when this meaning is intended. In some languages, imperatives can also be expressed by the perfect marker. In Toqabaqita this meaning can arise as a combination of the sequential subject marker and perfect or perfect alone, and in Unua as a combination of the irrealis subject marking and the perfect marker. Although more fine-grained research on these structures in needed, futurate meanings associated with perfect/'already' markers typically need to combine with a marker of future reference, which suggests that they alone do not carry the immediate future meaning (see also Section 5.2.2). Another piece of evidence for this is the fact that in all studied languages the futurate marker alone can express the meaning of immediate future, the perfect marker being optional. This is exemplified in (57) with Unua where the irrealis marker alone expresses immediate future. In all languages of Olsson's (2013) sample, the meaning of immediate future is also derived by a combination of some future reference marking and the iamitive marking, as shown in the Vietnamese example with the prospective and the marker *rồi* (58), repetition of (37) from Section 4.2.2. If we assume that the prospective marking determines the immediate future reading, then *rồi* is only being used as denoting the meaning of change of state which happens to be compatible with the prospective reading in Vietnamese.

(57) *i-re dabango-n, dabango-n nga* ***b****-i-pasus.*
3SG-feel belly-3SG belly-3SG COMP IRR-3SG-give.birth
'she felt her belly, her belly that was about to give birth.' (PB.05.40.029, PB.05.40.030, Pearce 2009)

(58) (At a birthday party for a child:) Little brother is about to arrive! (So hide the gifts/get ready to scream "surprise!")
Nam ***sắp*** *đến* ***rồi!***
boy PSP come IAM
'Little brother is about to arrive!' (Olsson, 2013:22)

Some duality effects have been attested in Nafsan, Toqabaqita, and Unua, but they do not necessarily arise with the studied markers. In all three languages the negation of relevant perfect/'already' markers with dynamic verbs does *not* result in the meaning of 'not anymore'. As I showed in Section

[14]For the sake of brevity, I use the term "perfect" to refer to the Oceanic markers studied in this chapter, although some of the studied markers might not exactly represent this category, e.g. *ju/goj (nu)* in Unua.

5.2.2 for Nafsan, this could indicate that duality is only related to the change-of-state meaning and is not a general property of these perfect markers. As we can see, all these additional meanings associated with iamitives by Olsson (2013), such as expectedness, immediate future, and duality, are in many cases a result of specific properties of discourse or other types of language-internal structures. Thus, assuming that these effects can equally well be a result of structural interactions not related to iamitives weakens the predictive power of positing iamitives as a category.

For the case of the perfect/'already' co-occurring with temporal adverbs, none of the languages had enough unambiguous information on this feature. For Niuean, Matthewson et al. (2015) report the incompatibility of the perfect with past temporal adverbs, which is, however, subject to variation, as some past temporal adverbs are marginally accepted. In the case of Toqabaqita, there was one example of the perfect co-occurring with a past temporal adverb (15), in an avertive irrealis meaning and not in the present perfect meaning. Thus, there is no evidence for any of the studied languages that perfect can co-occur with past temporal adverbs with a present perfect meaning. Further research is needed in order to establish whether the restriction on past temporal adverbs with the present perfect meaning found in Nafsan is also a feature of other tenseless languages.

Now I turn to another previously mentioned issue regarding the variability across languages when it comes to the perfect aspect. The fact that languages cover different distributions of meanings of this semantic space can be accounted for, at least to a large extent, by taking into consideration paradigmatic effects. The best evidence for this in our data is the availability of the 'hot news' meaning in certain languages. In all languages in which the studied markers cannot express the 'hot news' meaning, there is another marker specialized for that meaning. This is the case in Nafsan, Toqabaqita, and Unua. As argued in Section 5.3.1, markers specialized for specific meanings can block the usage of another marker in the paradigm for that meaning, even when its semantic definition would be compatible with the said meaning. In other words, there is nothing in the semantic definition of the perfect markers in Nafsan, Toqabaqita, and Unua to restrict their usage in the 'hot news' contexts. It is the pragmatics of the paradigm relations that would make the usage of perfect for those meanings odd, since there is another more specific marker to be used. This type of reasoning can be taken further to explain why the markers in Mandarin Chinese, Indonesian, and Thai said to be iamitives do not express the experiential meaning of perfect. Besides their markers proposed to be iamitives (Indonesian *sudah*, Mandarin *le*, and Thai *lέεw*), all three languages have markers which are specialized for the experiential reading of perfect, and these are *pernah*, *guo*, and *khɤɤi*, respectively. Thus, these markers pragmatically block the usage of the other "iamitive" markers in experiential contexts. I illustrate this point further in the case of Thai. Jenny (2001) writes: "Thai expresses the 'experiential' regularly with the marker *khɤɤi*, while the orientation verb *maa* 'come' is used to express 'the perfect of persistent situation' and 'recent past' and *lέεw* is used, among other functions, to cover the 'resultative'." This tells us that Thai has several markers, each specializing for one meaning of the perfect. Thus, it comes as no surprise that *lέεw* is then *not* used for the meanings already expressed by the other more specific markers. We can conclude from this that in some languages the perfect/'already' semantic space will be expressed more granularly, with several different markers, and in some, with markers occupying a larger number of functions.

The analysis of some basic distributions of meaning of perfect/'already' markers in Toqabaqita, Unua, Niuean, and Māori has enabled us to find additional evidence for the arguments against iamitives expressed in Chapter 5. The distribution of functions covering most, if not all, perfect functions together with the meaning of change of state is a striking feature of all studied languages. Moreover, when paradigm effects of blocking are taken into account we see that languages can choose any number of meanings in our semantic map as long as they do not overlap in their functions with other markers (excluding co-occurrences due to compatibility with certain meanings, see Section 5.3.2). These observations speak against positing the category of iamitives, because a) they can no longer be identified and differentiated from perfect based on their core meaning of change of state, and b) a more restricted number of functions expressed by the marker than expected from the "typical" perfect aspect can be successfully explained by the paradigmatic effects of blocking.

Having now discussed the category of perfect aspect, in the next chapters I turn to a discussion of the realis and irrealis mood, as the other two major TMA categories in Nafsan discussed in this work.

Part IV

Mood and modality: realis and irrealis

Chapter 7

The realis/irrealis distinction and related categories

In this chapter I turn to the discussion about the realis and irrealis mood, and the debate about their cross-linguistic and semantic validity as TMA categories. I present several problems identified in the literature, with a special focus on issues regarding Oceanic languages, which will also be addressed in the case of Nafsan in Chapter 8.

7.1 The meaning of the realis/irrealis distinction and the surrounding debate

7.1.1 The basics of the realis/irrealis distinction

In this section I describe some of the first proposals for analyzing the realis/irrealis distinction and the surrounding core problems that have been most discussed in the literature.

As mentioned in Chapter 1, the term "irrealis" was probably used for the first time by Sapir (1930) in his description of Southern Paiute. Sapir (1930:168) describes irrealis in the following way:[1] "This element indicates that the activity expressed by the verb is unreal, i.e. either merely potential or contrary to fact." Some years later, Dempwolff (1937) described the binary distinction between the *modus realis* and *modus imaginativus*, which is today referred to as realis and irrealis, respectively. In the 1970s this distinction started to be more widely used in language descriptions and analyses of diverse language groups, such as Austronesian languages of Papua New Guinea (Capell, 1971), Australian languages (Dixon, 1980), creole languages (Bickerton, 1975), and Papuan languages (Foley, 1986), among others. More typologically oriented works aiming at explaining the cross-linguistic features of realis/irrealis emerged in the 1990s (observed by von Prince et al., submitted) and include works by Roberts (1990) on Papuan languages, Bugenhagen (1993) on Austronesian languages of Papua New Guinea, Foley & Van Valin (1984), Givón (1984, 1994) and Palmer (2001) on cross-linguistic features of irrealis, and Mithun (1995) and Chafe (1995) on Amerindian languages. At the same time,

[1] This quote was identified in Elliott (2000:55).

some of the first criticism of the cross-linguistic validity of this category emerges (Trask, 1993; Bybee et al., 1994; Bybee, 1998). The discussion presented here starts in this time frame. I begin by analyzing the first proposals for a cross-linguistic semantic definition of irrealis, such as Roberts (1990), Givón (1994) and Mithun (1995), following with the ensuing criticism most prominently taken up by Bybee (1998). I focus on some works answering to this criticism in this section (e.g. Elliott, 2000; Van Gijn & Gipper, 2009) and continue in more depth in Section 7.1.2 with Elliott (2000) and McGregor & Wagner (2006), where I also analyze the latest wave of criticism (e.g. de Haan, 2012; Cristofaro, 2012) and the corresponding opposite opinions usually held by linguists working on individual languages (e.g. Michael, 2014; Matić & Nikolaeva, 2014). It is necessary to keep in mind that there is an extensive literature on realis and irrealis in individual languages and on diverse topics on categories which can be classified as either realis and irrealis in certain languages. It is the aim of this work to focus on most influential works when it comes to the theory of realis and irrealis and on works on individual languages which bear particular importance for analyzing the realis/irrealis distinction in the context of Nafsan and other Oceanic languages.

Based on his study of Amele [aey] and several other Papuan languages, Roberts (1990) contributes both to the understanding of different meanings expressed by realis and irrealis markers, as well as to the understanding of more general semantic domains they belong to. Papuan languages are well known for chained clauses consisting of medial clauses that precede the final clause in the chain. The medial clauses often have switch subject markers, which can additionally encode TMA values. Roberts (1990) shows that in Papuan languages the realis and irrealis notions are expressed by realis and irrealis subject markers on verbs in medial clauses, which then agree with more specific TMA values marked in the final clause. This is illustrated with examples from Amele, (1) with realis and (2) with irrealis.

(1) *Ho bu-busal-**en** age qo-in.*
pig SIM-run.out-3SG.DS.REAL 3PL hit-3PL.REM.PST
'They killed the pig as it ran out.' (Roberts, 1990:371)

(2) *Ho bu-busal-**eb** age qo-qag-an.*
pig SIM-run.out-3SG.DS.IRR 3PL hit-3PL-FUT
'They will kill the pig as it runs out'. (Roberts, 1990:372)

Table 7.1 shows fine-grained meanings expressed on final verbs, classified according to their co-occurrence with realis and irrealis markers in medial clauses in Amele. Out of nine Papuan languages analyzed by Roberts (1990:392), six of them converge on expressing the past and present reference by realis markers, including graded past tense in some languages. All nine languages express future reference with irrealis markers, seven languages also use irrealis in imperatives, and six languages use it for counterfactual meanings (Roberts, 1990:392). An important observation by Roberts (1990:383) is that Bargam is the only language in the sample that uses irrealis to express habitual past (cf. Carlson & Spejewski, 1997). Taking these different meanings into consideration, Roberts (1990) argues that realis should be semantically analyzed as referring to the real world and irrealis to unreal worlds, which can be further subdivided into future possibilities and non-future possibilities (counterfactu-

Table 7.1: The modal meanings of final verb categories classified according to their co-occurrence with realis and irrealis markers in medial clauses in Amele by Roberts (1990:375)

Realis	Irrealis
habitual past tense	future tense
remote past tense	imperative mood
yesterday's past tense	hortative mood
today's past tense	prohibitive mood
present tense	counterfactual/prescriptive mood
	apprehensive mood
	intentive mood
	desiderative mood
	habitual desire
	abilitative mood
	purpose

Table 7.2: The division of modal meanings expressed by the realis/irrealis distinction by Roberts (1990:398).

		Unreal worlds(s)	
	Real world	(future)	(non-future)
TRUE	factually true in real world (positive)	potentially true in real world	not potentially true in real world but true in unreal world (counterfactual)
FALSE	factually false in real world (negative)	potentially false in real world	not potentially false in real world but false in unreal world (negative counterfactual)

als), as shown in Table 7.2. The irrealis markers in Amele express both the possible (future in Table 7.2) and the counterfactual (non-future in Table 7.2) meanings.

Givón (1994) treats realis and irrealis as notional categories that describe the modal semantic space rather than strictly grammatical categories of a given language. He defines realis and irrealis in terms of what the speaker intends to assert, so, for instance, a realis assertion means that the proposition is strongly asserted to be true and the irrealis assertion means that the proposition is weakly asserted as either possible, likely, uncertain, necessary, desired or undesired (Givón, 1994:268). Bybee et al. (1994) and Palmer (2001) subscribe to the same definition of mood.

Bugenhagen (1993) studies several Oceanic languages of Papua New Guinea, where realis and irrealis are expressed either within the subject marking paradigm or as free particles, as discussed in Section 2.2 for Oceanic languages of Melanesia. Bugenhagen (1993) shows that there is considerable variety in what irrealis denotes across these languages. In some cases, what has been labeled as irrealis in one language does not even overlap in the distribution of its functions with the irrealis cat-

egory in another language. However, he finds several prototypical contexts in which irrealis forms are found and those are future, hypothetical and counterfactual conditionals, complements of predicates expressing 'want', and negative purpose clauses (Bugenhagen, 1993:37). Some of Bugenhagen's (1993) results will be discussed in Section 9.2.2.

Two early prominent works on the realis/irrealis distinction published in the same edited volume about modality (Bybee & Fleischman, 1995) are Mithun (1995) and Chafe (1995). Mithun (1995:386) describes the difference between irrealis and realis in the following way: "events and states classified as nonactualized, those that remain within the realm of thought and imagination, are overtly distinguished from those portrayed as actualized, having occurred or currently occurring." While both Mithun (1995) and Chafe (1995) adopt this definition of realis/irrealis, they focus on different language-specific issues in two Amerindian language, Central Pomo [poo] and Caddo [cad], respectively. In Caddo, the realis/irrealis distinction is marked by subject markers which combine with other TMA markers (Chafe, 1995), as shown in (3). Chafe (1995) reports that irrealis subject markers in Caddo express yes-no questions, negation, prohibitive, obligation, conditionals, and counterfactual meanings. Realis, on the other hand, marks WH questions, imperatives, and future, which is rather unexpected for realis mood. However, Chafe (1995) does not draw conclusions from this unexpected behavior, and he also does not justify why realis markers should be analyzed as realis at all. A possible conclusion might be that the realis subject markers do not denote realis, but are in fact simple person and number subject markers (see discussion below as well as Chapter 8).

(3) ***sah?****-yibahw-nah?*
2AG.IRR-see-PRF
'have you seen him?' (Chafe, 1995:354)

Mithun (1995) addresses the issue of the cross-linguistic variability of irrealis, put forward by Bybee et al. (1994) as the main obstacle to positing irrealis as a meaningful linguistic category. Mithun (1995:367) summarizes succinctly the issues of variability of irrealis in the following quotation:

> "Construction types marked as Irrealis in one language may be marked as Realis in the next. In some languages Imperatives are classified as Irrealis, in others as Realis; futures, questions, and negatives also show some variation. The formal expression of the distinction varies cross-linguistically as well. In some languages, only the Irrealis category is expressed overtly, in others both Irrealis and Realis are expressed, and in still others one or the other is expressed by multiple markers. The distinction may be indicated in various areas of the grammar: by particles, by clausal clitics, by verbal inflection, and perhaps even by verbal derivation (Eatough Ms. on Nisenan). In many languages it is carried as a feature of markers that also express other functions, such as tense or aspect, clause linking, or pronouns, as in Caddo (Chafe, 1995)[2] and Amele (Roberts 1990)."

Despite this variability of irrealis, Mithun (1995) adopts the realis/irrealis labels for two sets of

[2]Changed to a full reference in comparison to the original which references the same edited volume.

clause linkers in Central Pomo and argues that assuming this distinction can lead to fruitful cross-linguistic observations. She reports that irrealis is used in counterfactuals, conditionals, deontic constructions, future, hortative, and imperative. The realis clause linkers express the past and present reference, and they can be further specified for simultaneous and sequential events. Questions and negation also follow the distribution of realis and irrealis according to these functions. In other words, they do not play a role in determining the selection of realis and irrealis. Mithun (1995) notes that certain core modal functions, such as conditionals and counterfactuals, are cross-linguistically typically associated with irrealis, while other functions, such as imperatives, futures, questions, and negatives display more cross-linguistic variation. She offers grammaticalization-based explanations of how these variable functions are semantically consistent with both realis and irrealis interpretations, and in a given language this can result in them being expressed by either category. Her most notable contribution in this discussion is the proposal for the differences in scope between the realis/irrealis markers, and the interrogative and negative markers. She proposes that interrogative and negative markers scope over the realis/irrealis markers in Central Pomo, while the reverse is the case in Caddo. Since the interrogative and negative markers scope over the realis/irrealis in Caddo, they affect the interpretation of the mood. Although Mithun's (1995) approach is formally attractive, my observation is that it cannot be universally adopted as explaining questions and negation in all languages with the realis/irrealis distinction. In order to make the claims about scope falsifiable, a linguist needs to carefully examine language-specific data and analyze scope effects in a given language.

I turn now to the criticism against realis/irrealis by Bybee et al. (1994:236-140) and Bybee (1998), presented in the following three main arguments:[3]

1. The realis/irrealis is rarely realized as a binary morphological distinction in a given language.

2. Irrealis markers rarely denote the whole irrealis semantic domain.

3. If the realis/irrealis differs so vastly among languages – what is realis in one language can be irrealis in another language – then this distinction is not cross-linguistically valid.

Regarding the first point of criticism, Bybee et al. (1994) and Bybee (1998) argue that the realis/irrealis meaning is typically not expressed as a binary distinction, as languages typically employ several markers in both domains. As we have seen above in the case of Amele and Caddo, the realis/irrealis markers combine with other more specific TMA markers. However, that does not invalidate that realis and irrealis are in a binary relationship, and contrast both semantically and morphologically (by occupying the same slot). Authors who responded to Bybee's (1998) criticism often argue that many languages in fact *do* have a clear binary distinction between realis and irrealis

[3]One argument omitted here for the purposes of conciseness is the claim that irrealis is "sometimes used to cover etymologically related elements in very different constructions that are perhaps not synchronically related" (Bybee, 1998:264). Bybee (1998:264) illustrates this with the example of the verb *have* in two synchronically unrelated constructions: [*have* + past participle] and [*have* + *to* + verb]. However, in most published work on realis and irrealis, linguists typically deal with one and only morphological category with the realis/irrealis distinction, and not several different constructions.

(Elliott, 2000; McGregor & Wagner, 2006; Michael, 2014; von Prince et al., submitted). Elliott (2000) provides an example of Manam [mva], an Oceanic language spoken on Manam island in Papua New Guinea, as a language with a binary realis/irrealis distinction. Table 7.3 shows the realis and irrealis paradigms of portmanteau subject prefixes in Manam. According to Lichtenberk (1983), realis expresses the past and present reference in relation to the utterance time or another time in discourse (4), and irrealis is used to express "imagined" events (5), including future reference, commands, exhortations, warnings, and counterfactual events.

(4) ***u***-*nóʔu*
1SG.REAL-jump
'I jumped.' (Lichtenberk, 1983:183)

(5) *záma* *ʔúsi* *né-gu* ***mi***-*ásaʔ-i*
tomorrow loin.cloth POSS-1SG 1SG.IRR-wash-3SG.OBJ
'I will wash my loincloth tomorrow.' (Lichtenberk, 1983:184)

Table 7.3: Realis/irrealis portmanteau subject prefixes in Manam (Lichtenberk, 1983:182-183)

	Realis	Irrealis
1SG	*u-*	*m-*
2SG	*ʔu-*	*go-*
3SG	*i-*	*ŋa*
1PL.INCL	*ta-*	*ta*
1PL.EXCL	*ʔi-*	*ga*
2PL	*ʔa-*	*ʔama-*
3PL	*di-*	*da-*

Besides the case of Manam, in a joint paper with members of the MelaTAMP project (von Prince et al., submitted), we found that in a convenience sample of 70 Oceanic languages spoken in Melanesia, 24 languages have a binary system of realis/irrealis marking, while 46 languages do not have a binary system. As we can see, the binary realis/irrealis distinction is not at all a rarely occurring linguistic distinction. However, in most languages we do in fact find more than two distinctions in this semantic domain. The three main such cases are: a) combining specific modal markers with more general realis and irrealis markers, as in Amele, Caddo, Nyulnyulan languages (see Section 7.1.2), and Nafsan (see Section 8.3), b) having the realis/irrealis distinction as well as other TMA distinctions expressed in the same morphosyntactic slot, as is the case with realis/irrealis/perfect paradigms in Nafsan, and c) having several markers with different modal meanings (see North Ambrym in Section 9.2.2). Another case of a non-binary distinction would be that a given language has a morphological expression of only realis or only irrealis, in other words that one of the categories is unmarked (Elliott, 2000:57). In Chapter 8 I argue that that is also the case in Nafsan, where the paradigm of subject markers labeled as realis is semantically underspecified for the meaning of realis and con-

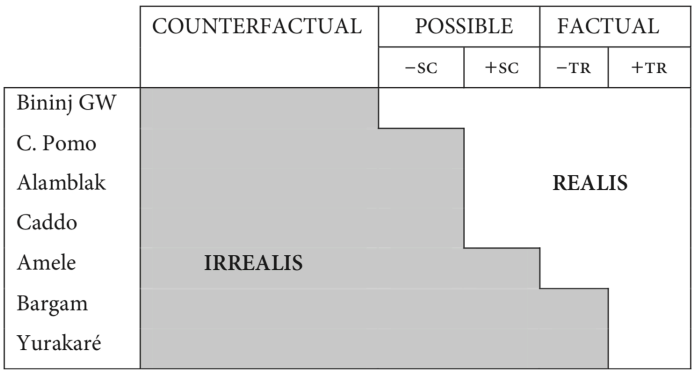

Figure 7.1: Implicational hierarchy of realis/irrealis in several languages studied by Van Gijn & Gipper (2009:174), SC = speaker commitment, TR = temporal

trasts pragmatically with the specified irrealis. In this work, I use the case of Nafsan (Chapter 8) and a few other Oceanic languages (Chapter 9) to show that having a non-binary distinction does not invalidate the existence of the realis and irrealis as linguistic categories.

A second point of criticism expressed by Bybee (1998) has to to with the invalidity of the irrealis semantic domain. Markers labeled as irrealis do not always cover the whole semantic domain of irreality, which would mean that their core meaning is not irreality (Bybee, 1998). Bugenhagen (1993) even notes that in his survey the meanings of irrealis markers in several languages do not even overlap in their distribution. Many authors have also responded to this criticism, namely by arguing that the irrealis semantic domain is not randomly rendered into different markers in different languages. Instead, the irrealis semantic domain consists of natural meaning parts which can either have specialized modal markers in a given language or serve as cut-off points between the meanings of irrealis in different languages. According to Van Gijn & Gipper (2009), these meaning parts of irrealis are hierarchically ordered, so that only the markers which have certain irrealis meanings are also expected to have others, hierarchically lower meanings. Similarly to Roberts (1990), Van Gijn & Gipper (2009) propose the tripartite realis/irrealis division into counterfactual, possible, and factual meaning. The schema of these meanings as applied to several languages by Van Gijn & Gipper (2009) is represented in Figure 7.1, and it follows from the following assumptions made by Van Gijn & Gipper (2009:175):

> "Irrealis minimally includes counterfactual events; if it contains possible events, it will also contain counterfactual events; within the category of possible events, languages may also draw a boundary between [–speaker commitment] and [+speaker commitment] events. Inclusion of the latter into the irrealis category implies inclusion of the former; if a language includes habituals [-temporal],[4] it will also include possible and counterfactual events."

[4]The word "[-temporal]" was added here for clarity.

Van Gijn & Gipper (2009) use the parameter of speaker commitment to explain the problematic variable status of futures and imperatives, which are in some languages, such as Caddo, expressed by realis, and in others, such as Amele, by irrealis. Van Gijn & Gipper (2009) also mention that future tense in Central Pomo and imperatives in Alamblak can be expressed either by realis or irrealis. Thus, when it comes to futures and imperatives, the lack of speaker commitment to the truth of the proposition can be associated with irrealis, and the presence of such commitment with realis. It depends on the language whether this parameter will play a role and where the cut-off point will be within the domain of "possible". The parameter of temporality divides the factual domain and aims at explaining the nature of the habitual aspect which can also be expressed by both realis and irrealis, depending on the language (Roberts, 1990; Givón, 1994; Bybee et al., 1994). Van Gijn & Gipper (2009) use atemporality to describe the temporally non-specific reference of habituals (Givón, 1994; Baker & Travis, 1997),[5] which makes them similar to generics which are not tied to a specific time frame (Krifka et al., 1995; Bertinetto & Lenci, 2012). Thus, in languages in which [-temporal] plays a role when it comes to habituals, such as in Yurakaré (Van Gijn & Gipper, 2009), habituals can be expressed by irrealis. These proposals for dividing the possible and factual domains into further parameters address directly the third point of Bybee's (1998) criticism, namely the high variability between languages regarding certain meanings which can be expressed by both realis and irrealis. Other such ambivalent meanings mentioned by Mithun (1995) above are negation and questions, which she resolved by positing different scope relations (see above). In this work, however, I do not focus on resolving how these different debated cases taking realis or irrealis in different languages can be understood better from the semantic point of view. Instead, I focus on questions about the categorial status of realis and irrealis, pertinent to Oceanic languages. These questions include a) positing a cross-linguistic semantic definition of irrealis, b) differentiating irrealis from other categories, such as future tense, and c) differentiating portmanteau realis/irrealis subject markers from unmarked subject markers.

7.1.2 The cross-linguistic meaning of realis and irrealis

In this section I focus on the proposals for the cross-linguistic meaning of the categories of realis and irrealis by Elliott (2000) and McGregor & Wagner (2006), as well as the criticism of such definitions by de Haan (2012) and Cristofaro (2012). In the end of the section I also discuss some recent works on realis/irrealis in different language groups (e.g. Cleary-Kemp, 2014; Michael, 2014; Matić & Nikolaeva, 2014).

Elliott (2000:66-67) builds on the work by Roberts (1990) and Mithun (1995) and proposes semantic definitions of realis and irrealis based on their prototypical semantics:

> "A REALIS proposition prototypically asserts that an event or state is an actualized or certain fact of reality;

[5] Baker & Travis (1997) develop a full account of the irrealis mood in Mohawk (Amerindian) as a marker of verbal definiteness/specificity, by which they explain why it is used in habituals.

> an IRREALIS proposition prototypically implies an event belongs to the realm of the imagined or hypothetical, and as such it constitutes a potential or possible event but it is not an observable fact of reality."

Using Comrie's (1985) model of defining tense as the "grammaticalized expression of location in time", Elliott (2000:67) proposes that "the grammatical category of reality status can be described as the grammaticalized expression of location in either the real or some unreal world". Stemming from her definition of realis and irrealis, Elliott (2000) justifies the cross-linguistic variability of irrealis by highlighting the observation made by Chung & Timberlake (1985) that there are more ways in which an event can be unreal than real; while there is only one real world, there are many unreal worlds. Elliott (2000) proposes prototypical semantic contexts in which realis and irrealis occur; for realis these are different types of past and present reference (and future in some languages), and for irrealis potential events, conditionals, counterfactuals, events qualified by modality, and commands. As discussed in Section 7.1.1, in some languages irrealis can also be used with negation, habituals, and interrogatives. Although Elliott (2000) provides examples of different languages studied in the literature for each of these realis and irrealis meanings, she does not offer a comprehensive semantic account of how these different uses relate or are constrained by her semantic definition provided above.

McGregor & Wagner (2006) study irrealis in Nyulnyulan languages (non Pama-Nyungan, Australian) and propose that the core meaning of irrealis is the meaning of unrealized, which is understood as referring to possible worlds. Figure 7.2 shows a graphic representation of the actual and possible worlds by McGregor & Wagner (2006). McGregor & Wagner (2006:369-375) respond to the irrealis debate by saying that irrealis has the core cross-linguistic meaning of "unrealized", which can be identified across languages. They also argue that the contrast between real and unreal events is a "viable conceptual contrast", as shown by its applicability to Nyulnyulan languages. While the feature of +unrealized is a semantic invariant of irrealis, other language-specific meanings can be derived in different ways in each language system. Nevertheless, McGregor & Wagner (2006) still have the problem of semantically relating potential and counterfactual meanings of irrealis, because the counterfactual worlds are not accessible from the "now" index in their model (for a detailed explanation see Section 7.1.3). For that reason, they assume that the core meaning of irrealis is only "unrealized" and that the counterfactual meaning can arise when the described event is in the past or present, and, thus, analyzed as an unrealized past or present event.[6] The same problem of relating the potential and the counterfactual meanings of irrealis is discussed by Verstraete (2005), who proposes that the counterfactual meaning is derived as an implicature in non-Pama-Nyungan languages, while the core meaning of irrealis is that of "potential actualization".

[6]The theoretical explanation of how the counterfactual meaning of irrealis arises is not clearly presented by McGregor & Wagner (2006), as they do not explicate their assumptions, including the one that the potential meaning of irrealis is expressed by the speech act of an irrealis clause and not irrealis itself.

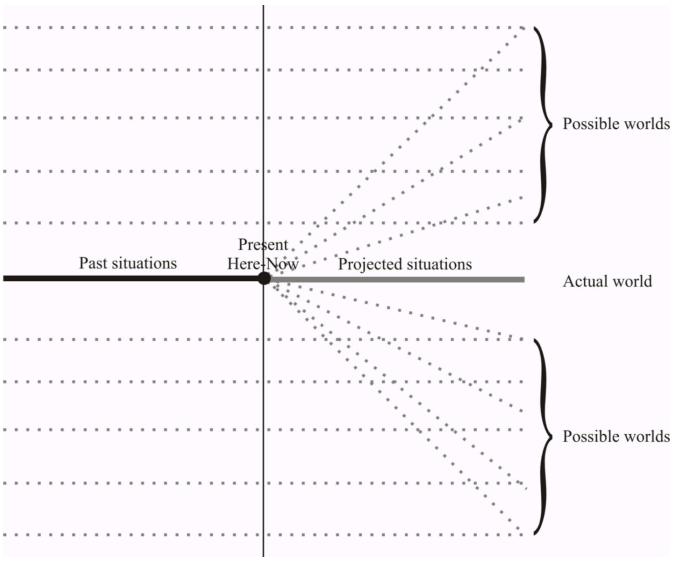

Figure 7.2: The model of the possible worlds by McGregor & Wagner (2006:350)

McGregor & Wagner (2006) make two additional observations important for this work, namely those about the compositionality of realis and irrealis with other TMA markers and the unmarkedness of realis in Nyulnyulan languages. They exemplify the compositionality by showing the combination of a modal marker meaning 'likely' with an irrealis-marked verb in Nyikina [nyh] (6) and the usage of an evasive particle 'nearly, almost (but didn't)' with irrealis in Warrwa [wwr] (7). These combinations occur only with the future-oriented potential meaning of irrealis.[7] In contrast to irrealis which has a defined core meaning, for McGregor & Wagner (2006:370) realis is underspecified for +/-unrealized, as it "it does not specify anything about the actuality status of the situation". They draw this conclusion from the fact that the particles of probability, as in (6) and (7), can also combine with realis in order to express lack of certainty. In Chapter 8 I argue that realis is also underspecified in Nafsan and in Section 9.1 I extend this analysis to some other Oceanic languages with similar properties.

(6) [Nyikina (Nyulnyulan, non-Pama-Nyungan)]
Niŋara*-do wa-**r**-a-bula wandal.*
likely it-IRR-a-come boat
'It is likely that the boat will arrive./ The boat might arrive.' (Nekes & Worms, 2006:257)

(7) [Warrwa (Nyulnyulan, non-Pama-Nyungan)]
Miliyarri *nga-**l**-yanba-na kinya juurru ngayu-na.*
nearly 1:MIN:NOM-IRR-step:on-PST this snake 1-ERG
'I nearly stepped on the snake.' (McGregor & Wagner, 2006:358)

The main contribution of Elliott (2000) and McGregor & Wagner (2006) to the realis/irrealis debate is proposing that, although irrealis is a cross-linguistically variable category, it is still possible to

[7] The combinations of irrealis with other TMA markers were also noticed by Palmer (2001:145) who calls them "joint marking".

establish its prototypical or core meaning which is valid cross-linguistically. As an answer to this view and the growing irrealis debate, Caterina Mauri and Andrea Sansò edited a volume of Language Sciences dedicated to the irrealis debate. Among several discussions published in this volume, I focus on the contributions by de Haan (2012) and Cristofaro (2012) who build on Bybee's (1998) work and argue against the possibility of establishing a prototype of irrealis. I first focus on de Haan's (2012) criticism and then on Cristofaro's (2012) proposal.

According to de Haan (2012), realis is defined as a set of real events and irrealis as a set of unreal events. He focuses on the category of irrealis and argues that a cross-linguistically valid prototype of irrealis cannot be established because there are no meanings that are universally marked as irrealis. He exemplifies this by comparing Limbu [lif] (Tibeto-Burman), where irrealis *gɔ:ni* is restricted to marking counterfactual conditionals (8), and Hualapai [yuf] (Pai, Yuman), where irrealis is used to express relative future and it cannot be used in conditionals (9). Crucially, the semantic distributions of these two markers labeled as irrealis do not even overlap.

(8) [Limbu (Tibeto-Burman)]

*yaŋ kɔtt-u-ŋ-**gɔ:ni** iŋ-u-ŋ-ba.*
money have-3PL-1SG.AG-IRR buy-3PL-1SG.AG-IPFV
'If only I had the money, I would buy it.' (van Driem 1987:140–142, cited in de Haan 2012)

(9) [Hualapai (Pai, Yuman)]

*olo-h-ch ha: thi:-**hi**-k-wi*
horse-DEM-SBJ water 3/3.drink-IRR-SS-AUX/be
'The horse is going to drink the water.' (Watahomigie et al. 2001:309–314, cited in de Haan 2012)

We can see that the irrealis markers in Limbu and Hualapai would be better described as having more specific TMA labels. For this reason, de Haan (2012) argues that irrealis "is itself made up of other categories", which means that specific irrealis meanings can be expressed by individual formal categories in different languages. Thus, he concludes that both realis and irrealis do not have semantic cross-linguistic core meanings nor core syntactic expressions, which shows that reality is only a philosophical and not a linguistic notion. In Section 9.2 I address this problem and show that some languages indeed have specific modal categories, which are also a part of the irrealis semantic domain, while other languages have irrealis markers which cover the entire semantic domain of the irrealis category. The proposal for the semantics of irrealis is outlined in Section 7.1.3.

Cristofaro (2012) builds her work on Bybee's (1998) argument that the grammatical structures labeled as realis/irrealis might be based on other grammatical notions that are not even related to mood distinctions. Focusing on portmanteau subject markers in switch-reference systems, as in Amele, and preverbal subject markers, as in Manam, Cristofaro (2012:135) notes the following:

> "From a conceptual point of view, the notion of person is completely independent of the realized vs. unrealized status of the state of affairs being described, so there is no obvious reason why the distinction between realized and unrealized states of affairs

> should be encoded at the level of person marking. The morphological structure of some of the relevant forms suggests in fact that this may not actually be the case."

Cristofaro (2012) proposes that the subject markers labeled as irrealis might in fact be simple subject markers, whose perceived restriction to "realized" or "unrealized" contexts might be a consequence of an entirely independent grammatical restriction of forms labeled as realis and irrealis. Although Cristofaro (2012) does not develop this argument fully on cases of individual languages, her proposal captures an important observation that some paradigms of portmanteau subject markers are indeed underspecified for TMA and that their morphological structure and diachrony might be additional pieces of evidence for this claim.

Cristofaro's (2012) proposal as it could apply to Oceanic languages is further discussed in Section 7.2.1, and its implications are discussed on the case of Nafsan and other Oceanic languages in Chapters 8 and 9. A related line of criticism of assuming that realis/irrealis might in fact be another category altogether deals with questioning whether realis/irrealis can be reanalyzed as non-future/future tense distinction (e.g. Velupillai, 2016). This problem regarding Oceanic languages is addressed in Section 7.3.

Other recent works on realis/irrealis in individual languages include Michael (2014) and Matić & Nikolaeva (2014). Michael (2014) responds to the irrealis criticism by adopting Corbett's (2012) "canonical" approach to grammar in which the best, clearest, indisputable features of a given category are established as canonical. Michael (2014) proposes that realis/irrealis in Nanti, an Arawak language of Peruvian Amazonia, could be considered to have the canonical realis/irrealis distinction. Realis is used for non-future temporal reference and positive clauses, while irrealis is used in future temporal reference, negative clauses, hypothetical, counterfactual meanings, imperatives, obligation, need, purpose and prospective complement clauses (Michael, 2014). On the basis of their work on Tundra Yukaghir, Matić & Nikolaeva (2014) argue that it should be possible to analyze realis and irrealis as "notional" moods in languages in which they may lack an overt morphological expression, but can be derived through pragmatic enrichment.

The work on realis/irrealis based on Oceanic languages by Krifka (2016) and von Prince et al. (2019d, submitted) is discussed in Section 7.1.3, and the work by Barbour (2011), Cleary-Kemp (2014) and Pearce (2016) in Section 7.3. Some further literature on tenselessness in other language families is also discussed in Section 7.3.

7.1.3 The proposal for the semantics of realis and irrealis

In this section I outline the proposal for the semantics of realis/irrealis made by von Prince (2019), von Prince et al. (2019d, submitted), and Krifka (2016), followed in this work.

As we have seen in McGregor & Wagner's (2006) model in Figure 7.2, realis and irrealis can be represented as referring to the actual world and possible worlds, respectively. Many linguists adopt similar approaches when it comes to the modeling of time and modality (e.g. Condoravdi, 2002; Iatridou, 2000). In this work I adopt the branching-times approach from von Prince (2019), von Prince et al. (2019d, submitted) and Krifka (2016). von Prince's (2019) branching-time model

builds on the work by Thomason (1970, 1984) and Dowty (1977), who developed the branching-times model represented in Figure 7.3, where i_1 and i_2 are partially ordered temporal indices, referring to a past moment and the present moment, respectively. The branches $b_1 \ldots b_6$ denote possible worlds which branch out in infinite possibilities from a given moment in time. Thus, b_1, b_2, b_5, and b_6 are counterfactual possibilities of the past, and b_3 and b_4 are future possibilities. As von Prince (2019) notes, this model is based on the idea of historical necessity – while the statements about the past and the present are necessarily true, the statements about the future might be true or false (Prior, 1957; Thomason, 1970, 1984). In other words, while there is only one actual world in the past and present, there are many possible worlds when it comes to the future reference. In order to formalize this historical necessity logically, Thomason (1970, 1984) uses the necessity operator and introduces the assumption that the quantification over different worlds is restricted only to the branches identical up to the present moment. This means that from the actual present i_2 in Figure 7.3, we can only access and quantify over the possible future b_3 and b_4, but not the counterfactual possibilities b_1, b_2, b_5, and b_6.[8] As shown in Section 7.1.2, relating the counterfactual and possible future semantically was also a problem discussed by McGregor & Wagner (2006) and Verstraete (2005). In order to solve this problem, von Prince (2019) gives up the restriction imposed by Thomason (1970, 1984) and allows for the quantification of all three domains of actual, counterfactual, and possible. Figure 7.4 illustrates these areas within the branching-times model, and the following quotation from von Prince (2019) defines each of the areas formally:

1. i_c[9] and predecessors of i_c (the actual);
2. successors of i_c (the possible);
3. and indices that are neither successors nor predecessors of nor identical with i_c (the counterfactual).

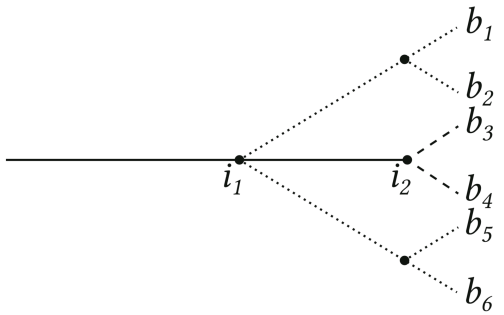

Figure 7.3: A graphical representation of Thomason's (1984) model by von Prince (2019)

[8] We could quantify over $b_1 \ldots b_6$ by shifting back to the past i_1 (e.g. Ippolito, 2013), but in that case we cannot quantify exclusively over b_1, b_2, b_5, and b_6, because they are not accessible from i_2, and from i_1 they cannot be distinguished from b_3 and b_4.

[9] The subscript "c" stands for context and i_c are then indices of the actual present.

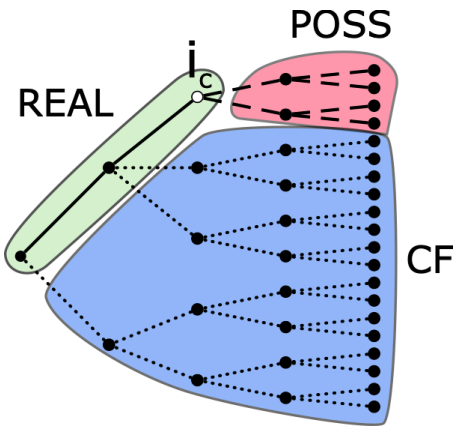

Figure 7.4: The three domains of the modal-temporal space, relative to the actual present i_c: the actual (REAL); the possible (POSS); the counterfactual (CF), adapted from von Prince et al. (2019a).

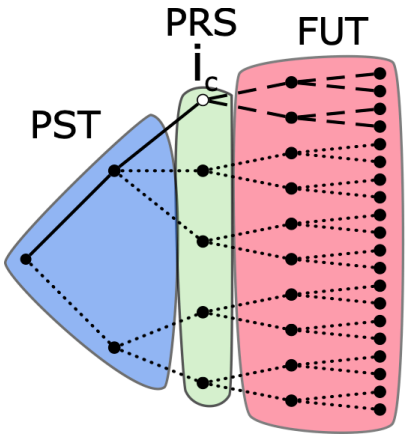

Figure 7.5: The three temporal domains of the modal-temporal space: the past (PST); the present (PRS); the future (FUT), adapted from von Prince et al. (2019a).

Regarding the modal areas represented in Figure 7.4, we can now define realis as corresponding to the actual domain, and irrealis to the non-actual domain consisting of the counterfactual and the possible meanings. We can see that this type of model follows the literature which posits the three main areas within the semantic domain of realis and irrealis, such as Roberts (1990) and Van Gijn & Gipper (2009). The advantage of this model, however, is that it combines the modal meanings and temporal reference, which captures the intuition that realis typically refers to the past and present, and irrealis mainly to the future, but also to other temporal references. von Prince (2019) additionally assumes that the indices in her model are ordered temporally. In the graph in Figure 7.5, vertically aligned indices are taken to be simultaneous, so any given pair of indices stands in a particular temporal order. This model captures the intuition of interrelatedness between mood and temporal reference, which is essential for explaining how temporal interpretations are derived in mood-prominent languages without any categories of tense.

7.2 Oceanic subject markers and semantic underspecification

7.2.1 The case study of Unua

As discussed in Section 7.1.2, Cristofaro (2012) proposes that what has been labeled as a realis/irrealis distinction in some languages might in fact be subject marking semantically underspecified for mood. This issue is particularly important in the case of Oceanic languages, because there are many reported cases of realis/irrealis markers interacting in different ways with the marking of subject person and number on the verb. Different morphosyntactic strategies of this interaction were addressed in Section 2.2, where I showed that some Oceanic languages have subject marker paradigms with morphologically segmentable material, some of which might include realis/irrealis affixes, and others have portmanteau morphemes which are not easily segmentable in their synchronic systems. In this section I focus on a language in which the paradigms of subject markers are morphologically segmentable into person/number information and realis/irrealis information, and in which realis is morphologically unmarked. The main issue explored here is whether the realis paradigm is semantically specified as being realis or whether we could assume that we are dealing with simple person and number marking, semantically underspecified for the realis meaning. In this section I focus on Unua, an Oceanic language spoken on the Malakula island, Vanuatu), based on the available material by Pearce (2009, 2015a, 2016).

Pearce (2015a, 2016) describes Unua as having the binary contrast between realis and irrealis expressed on the subject markers, as shown in Table 7.4 and in examples (10) and (11). Realis marks the past and present reference and irrealis occurs with the future reference, imperatives, prohibitives, purpose clauses, different types of complement clauses, and conditionals.

Table 7.4: Subject prefixes with the verb *xa* 'to go' in Unua (Pearce, 2015a:212)

	Realis	Irrealis
1SG	*no-xa*	***b**-a-xa*
2SG	*u-xa*	***b**-u-xa*
3SG	*i-xa*	***b**-i-xa*
1DU.INCL	*rru-xa*	*rru-**b**-xa*
1DU.EXCL	*mor-xa*	*mor-**b**-xa*
2DU	*mur-xa*	*mur-**b**-xa*
3DU	*ru-xa*	*ru-**b**-xa*
1PL.INCL	*rra-xa*	*rra-**b**-xa*
2PL.EXCL	*mam-xa*	*mam-**b**-xa*
2PL	*mum/mim-xa*	*mum/mim-**b**-xa*
3PL	*ra-xa*	*ra-**b**-xa*

(10) *Xina reken **no**-xa vex raman.*
1SG today 1SG-go to LOC.garden
'Today I went to the garden.' (Pearce, 2015a:235)

(11) *Xina reken* ***b-a****-xa* *b-e-xr-i* *ba* *rraxum*
1SG today IRR-1SG-go IRR-1SG-dig-TR ATTEN crab
'Today I am going to go to dig for crabs.' (Pearce, 2015a:235)

Realis is morphologically unmarked in Unua, except for 1SG, and irrealis is marked by the affix *b*, which is in first position in singular and between other person/number morphemes in the other persons. As we can see from Table 7.4, the forms labeled as realis are also formative elements of the irrealis paradigm. The question is whether this morphological phenomenon is related to the semantics of these subject markers. If we consider the meaning to be compositional, given that the "realis" forms are also formative elements of the irrealis forms, we can posit a hypothesis that the realis paradigm can be analyzed as simple subject-agreement marking without being semantically specified for mood.[10] However, there are at least some forms in which the realis mood is expressed overtly in the morphology, such as 1SG.REAL *no-*. Apart from the subject markers, the expression of realis/irrealis also seems to be encoded in relative clauses in Unua. In relative clauses, realis *does* have the morphological expression in form of *m* inherited from the Proto-Oceanic realis $^{*}m^{w}$-, as shown in the contrast between a realis relative clause in (12)[11] and an irrealis relative clause in (13).

(12) *Naxerr [nga* ***m****-u-xa],* *u-sar* *re* *nemen?*
time COMP REL-2SG-go 2SG-fly LOC plane
'When you went, did you go by plane?' (Pearce, 2016:68)

(13) *Naxerr [nga* ***b****-u-xa],* *b-u-sar* *re* *nemen?*
time COMP IRR-2SG-go IRR-2SG-fly LOC plane
'When you go, will you go by plane?' (Pearce, 2016:68)

Pearce (2016) provides a diachronic solution to the realis appearance in relative clauses by arguing that *m-* underwent a lenition process which was favored in main clauses. On the other hand, the salience of *m-* as a marker for modifying adjectives helped the preservation of *m-* in relative clauses. This particular case bears relevance in the discussion regarding Cristofaro's (2012) proposal, because it indicates that diachronically there used to be an overt realis marker, which still exists in certain constructions and in 1SG. Thus, this diachronic contrast could still be playing a role in the synchronic system of subject markers. Following the reasoning about linguistic categories by Wiltschko's (2014) (originally made for number marking), if we find realis interpretation even in the absence of overt morphological marking, that is indicative of the presence of the realis category, while the absence of a dedicated realis interpretation is indicative of the absence of such a category. In order to test this in Unua, I studied the semantics of these subject markers and looked for any evidence that would disprove that the realis subject markers have the function of expressing the realis mood. I looked for any cases of the usage of the realis paradigm in non-actual contexts where irrealis would otherwise be expected, such as different types of conditional clauses. I found that in hypothetical and counterfactual conditionals, we find both realis and irrealis occurring in the protasis (Pearce, 2015a:243), as shown in the hypothetical conditionals (14) and (15), and the counterfactual conditionals (16)-(17).

[10] Full subject pronouns have an entirely different set of forms (Pearce, 2015a:212).
[11] Note that Pearce (2016:68) glosses the realis marker in the synchronic Unua data as REL (relative).

If the realis subject markers were truly marking the realis mood, they would not be grammatical in non-actual contexts referring to possible and counterfactual worlds.

(14) *Avra* ***no****-xa vex Lakatoro mevix, b-e-vr-i raes bi-sobon.*
if 1SG-go to Lakatoto tomorrow IRR-1SG-buy-TR rice IRR-some
'If I go to Lakatoro tomorrow, I will buy some rice.' (Pearce, 2015a:243)

(15) *Avra* ***be****-ke-i, go no-rrang mu be-bboer taxo xai.*
if 1SG.IRR-see-TR and 1SG-not.able again 1SG.IRR-follow behind 2SG
'If I see it, I am no longer able to go behind you.' (RBa.04.54.011/12, Pearce 2009)

(16) *Avra* ***no****-xa vex Lakatoro nano, b-e-vr-i raes bi-sobon.*
if 1SG-go to Lakatoro yesterday IRR-1SG-buy-TR rice IRR-some
'If I had gone to Lakatoro yesterday, I would have bought some rice.' (Pearce, 2015a:245)

(17) *Avra* ***b****-a-xa ma nano vex Vila, b-e-ke-i ju nabburen so-g.*
if IRR-1SG-go only yesterday to Vila IRR-1SG-see-TR already friend GEN-1SG
'If I had gone to Vila yesterday, I would have seen my friend.' (Pearce, 2015a:246)

This unusual usage of realis in conditional protases has also been reported by McGregor & Wagner (2006) for Nyikina (non-Pama-Nyungan), Bugenhagen (1993) for Sursurunga (Western Oceanic) , and by Exter (2012) for Wogeo (Western Oceanic). In Chapter 8 I discuss the same issue in Nafsan and propose the reanalysis of the realis paradigm as the general paradigm of subject marking. In the case of Unua, it seems likely that the realis paradigm is in fact only the subject marking in main clauses, and that it is *not* specified for the realis mood. The analysis proposed for Nafsan in Chapter 8 might be applicable to Unua's case, as well as to other languages mentioned above (see also Section 9.1), all of which express realis by subject markers.

7.2.2 Temporal reference in languages without tense

As established in Section 7.1.3, the semantics of realis and irrealis is inextricably connected to the expression of temporal reference – realis expresses the past and present, and irrealis expresses the future, but also the possibilities of the past and present. In this section I focus on the consequences of reanalyzing some of the Oceanic realis paradigms as subject markers underspecified for TMA, as proposed in Section 7.2.1. If Unua only has subject markers which are not specified for realis, how does the temporal reference of past and present arise at all? There has been a lot of work in the literature on this topic regarding tenseless languages and languages without an overt category of tense in general. I discuss some of the current proposals and how they could relate to the Oceanic issues.

The work on tenselessness has focused on languages without any overt morphological tense marking. However, these types of languages usually lack the overt marking only in the past and present, while the future is typically obligatorily marked by a future marker. This has been reported for St'át'imcets [lil] (Salishan) (Matthewson, 2006), Mandarin Chinese (Lin, 2006), Kalaallisut [kal] (Greenlandic Inuit) (Bittner, 2005), Yukatek Maya [yua] (Bohnemeyer, 2002), and Paraguayan Guaraní [gug] (Tonhauser, 2011), among others. St'át'imcets examples (18) and (19) show the lack of

overt tense marking which results in the past and present reference, respectively. However, when it comes to the reading of future reference, the clause cannot be left unmarked for tense (20), as the future marker *kelh* is obligatorily used (21).

(18) *táyt-kan* *lhkúnsa*
hungry-1SG.SBJ now
'I am hungry now.' (Matthewson, 2006:677)

(19) *sáy'sez'-lhkan* *i-tsilkstásq'et-as*
play-DIR-1SG.SBJ when.PST-Friday-3CONJ
'I played on Friday.' (Matthewson, 2006:677)

(20) **táyt-kan* *natcw/* *zánucwem*
hungry-1SG.SBJ one.day.away/ next.year
'I will be hungry tomorrow/ next year.' (Matthewson, 2006:677)

(21) *táyt-kan* ***kelh***
hungry-1SG.SBJ FUT
'I will be hungry.' (Matthewson, 2006:678)

In order to explain the discrepancy between the lack of overt tense marking in the past and present and obligatorily marked future tense in St'át'imcets, Matthewson (2006) develops an analysis in which tense is covertly present in St'át'imcets. Matthewson's (2006) proposal is that the superficially tenseless sentences as in (18) and (19) contain a phonologically null tense morpheme TENSE, which "introduces a variable over time intervals (the reference time) which receives its value from the contextually determined assignment function" (Matthewson, 2006:680). She defines the lexical entry of TENSE as being restricted to non-future. Although Matthewson's (2006) proposal does not offer a strictly semantic explanation of why there is a fundamental difference in markedness between past/present and future, it captures the fact that the observed structures in St'át'imcets behave semantically equally to languages with a morphologically expressed non-future/future distinction. In the context of Oceanic languages in which the realis subject markers can be reanalyzed as general subject markers underspecified for TMA, as in Unua and Nafsan, this problem would correspond to understanding where past and present temporal interpretations come from. One approach would be to adopt Matthewson's (2006) analysis and posit either a covert TENSE or MOOD morpheme in the paradigm, or to analyze the general markers as entirely tenseless/moodless[12] and adopt a pragmatics-based approach. The former approach, however, does not have any advantage over simply assuming that the whole paradigm of subject markers simply denotes the realis mood, the only difference being that the realis morpheme is considered to be covert.[13] For that reason, I turn to two other types of approaches rooted in pragmatic reasoning.

Other approaches to explaining the temporal reference in tenseless languages offer pragmatic

[12]For the discussion about distinguishing mood from tense, see Section 7.3.

[13]The difference between St'át'imcets and Oceanic languages is that the subject markers in St'át'imcets are true general subject markers that do not interact with TMA meanings and there is no other verbal category which tense values could be ascribed to. Thus, Matthewson (2006) needs to posit an independent covert morpheme.

and aspect-based explanations. Matthewson (2006) also notes that the lexical aspect plays a role in determining the temporal reference of tenseless sentences – states highly prefer the present interpretation, activities do not have a strong preference, and achievements prefer past interpretations. These default aspect-based temporal interpretations have shown to be at play in many languages, including Yukatek Maya, Inuktitut (Bohnemeyer, 2002; Bohnemeyer & Swift, 2004), Mandarin Chinese (Lin, 2006), Navajo (Smith et al., 2007; Smith, 2008), and Hausa [hau] (Mucha, 2015), among others. Aspectual and other pragmatic constrains on different types of temporal interpretations have been most systematically laid out by Smith & Erbaugh (2005), Smith et al. (2007), and Smith (2008) for Mandarin Chinese and Navajo, followed by Mucha (2015) for Hausa. I turn now to the theory of pragmatic constraints of temporal reference proposed by Smith et al. (2007), Smith (2008), and Mucha (2015).

Smith et al. (2007) and Smith (2008:231) propose the following pragmatic constraints of temporal reference:

> **The Deictic Principle**
> Speech Time is the central orientation point for language. The Present time is located at Speech Time; the Past precedes it, the Future follows.
> **The Bounded Event Constraint**
> Bounded situations may not be located in the Present.
> **The Simplicity Principle of Interpretation**
> Choose the interpretation that requires least information added or inferred.

These principles say that the default interpretation of unbounded situations is present, for bounded it is past, and the the simplest interpretations are preferred.[14] In order to illustrate this, Smith (2008:233) uses the sentence *Mary is working (now/tomorrow)*, which can have either the present or future reading, to show that its default reading is the present. She predicts this by the Deictic and Simplicity Principles. According to the Deictic Principle, the present is the preferred temporal location and according to the simplicity principle, the present is simpler than future. For Smith (2008:233), the present is simpler because it does not involve an element of uncertainty as future does. In other words, while the present is known to the speaker, it is uncertain which of the possible futures will actually occur (see also Section 7.1.3).

Smith (2008) uses the case of Mandarin Chinese to show the effects of the Bounded Event Constraint. She shows that when overt aspectual markers denoting boundedness, *le* and *guo*,[15] are used, the temporal interpretation is situated in the past, as shown in (22) and (23). On the other hand, when the progressive marker *zaì* is used, the default interpretation is that of the present reference, as shown in (24).

[14] The Simplicity Principle results from Grice's second Maxim of Quantity by which people say the minimum necessary to transmit the information. This principle "constrains the inferences that people make when they infer what is not explicitly asserted" (Smith et al., 2007:60).

[15] Smith (2008) analyzes Mandarin Chinese *le* and *guo* as perfective markers. In Section 6.4 we discussed their status as perfect markers, and *le* was classified as iamitive by Olsson (2013). For this point, however, it is crucial that, regardless of the classification of *le* and *guo*, they express boundedness.

(22) *Wǒ shuāiduàn-**le** tuǐ*
I break-LE leg
'I broke my leg (it's still in a cast).' (Smith, 2008:236)

(23) *Wǒ shuāiduàn-**guo** tuǐ*
I break-GUO leg
'I broke my leg (it has healed since).' (Smith, 2008:236)

(24) *shìshí-shàng zhè-zhǒng móshǐshī **zaì** chaōxí kēxué*
fact-on this-kind model ZAI copy science
'In fact, this model is already copying the natural sciences.' (Smith, 2008:238)

For zero-marked clauses without any overt TMA markers, Smith (2008:241) also extends the Bounded Event Constraint to lexical or situation aspect in her terminology and calls it Temporal Schema Principle, so that the atelic events behave as unbounded, and telic events as bounded events. The crucial point in Smith's (2008) argumentation is that the defaults presented in (22)-(24) can be overridden by explicit temporal information in the context. This is the case of the future reference in Mandarin Chinese, which needs to be indicated by either the future marker *jiāng*, future temporal adverbs, future-oriented verbs such as 'plan' or 'expect', or similar contextual information. If applied to Oceanic languages, this pragmatic approach would potentially be able to explain why, for instance in Unua, the "realis" subject markers typically have the past and present reference, except for some specific modal contexts in which they can have future and counterfactual readings.

Mucha (2015) builds on the work by Smith et al. (2007) and Smith (2008), and formally motivates the need for the Bounded Event Constraint in Hausa. Mucha (2015:67) presents three main components of the Bounded Event Constraint in Hausa in the following quotation (ET = Event Time and RT = Reference Time below correspond to what I have called TSit and TT, respectively):

> **Temporal boundedness**: [ET $\subseteq$ RT]
> Temporal boundedness means that the running time of the event is included in the reference time. Since temporal boundedness is expressed by grammatical aspect in Hausa, this is a hard–wired semantic restriction in perfective sentences.
> **Present interpretation**: [RT = UT]
> In the case of a present interpretation of sentences containing event predicates, the reference time is identical to the utterance time.
> **Instantaneous UT**: $\forall$t [t $\subseteq$ UT $\rightarrow$ t = UT]
> Pragmatics dictates that speech acts are instantaneous, i.e. an interval t can only be a subinterval of the contextually defined utterance time if it equals the utterance time.

The Bounded Event Constraint explains why durative events marked for perfective in Hausa receive past readings by default rather than present (Mucha, 2015:68), as shown in (25). The durative event of playing in (25) cannot be interpreted as having occurred within the Utterance Time,[16] which would be the default time. Since the perfective aspect requires the event to be included in the

[16]For the issue of incompatibility of the present and perfective see Malchukov (2009) and De Wit (2016).

Reference Time, the only possible interpretation is to shift the Reference Time to the past (Mucha, 2015:68).

(25) *Bashir **yā** yi wə̀sā*
Bashir 3SG.M.PFV do play
'Bashir played.' (Mucha, 2015:68)

In order to explain why the past reading rather than the future is the default reading in (25), Mucha (2015:69) organizes the three temporal references into a Hierarchy of Simplicity (based on the Simplicity Principle of Interpretation), by which the three temporal references are ordered as present > past > future, from the simplest to the most complex. Thus, after the present, the past is the next most available meaning because it is more complex than the present and simpler than the future. The criteria for what constitutes simplicity of these interpretations are presented in the following quotation by Mucha (2015:69):

> **Hierarchy of Simplicity**
> **RT = UT: Present time reference** is the simplest kind of temporal reference since (i) an utterance situation always provides a time interval to which an RT variable can be anchored, namely the utterance time, and (ii) present interpretation requires no displacement of either the time or the world of evaluation.
> **RT < UT: Past time reference** is more "complex" than present time reference since it requires displacement of the reference time from the concrete utterance situation.
> **RT > UT: Future interpretation** also involves reference time shifting and is hence more complex than present interpretation. It is also more complex in comparison to past time reference, because[17] it adds the complication of modal displacement and thus increases the level of abstraction required for interpreting the utterance.

Since the present reference is the highest in this hierarchy, it is preferred over past and future interpretations, as shown in (26) with an imperfective-marked event that gets the present interpretation by default. However, Mucha (2015:70) warns that these default interpretations can be overridden by more specific temporal contexts, as shown in (27) in which an imperfective event has a past temporal interpretation.

(26) *Bashir ya-**nə̀** wə̀sā*
Bashir 3SG.M-IPFV play
'Bashir is playing.' (Mucha, 2015:70)

(27) Context question: What was Bashir doing when Ibrahim entered his house yesterday?
*Lōkàcîn dà Ibrahim ya zō, Bashir ya-**nə̀** wə̀sā*
When Ibrahim 3SG.M.REL.PFV come, Bashir 3SG.M-IPFV play
'When Ibrahim came in, Bashir was playing.' (Mucha, 2015:70)

[17] For reasons of clarity, this sentence was slightly edited.

Mucha (2015:70) captures this pragmatic influence of the context over the temporal interpretation by formalizing the following principle:

> **Contextual Reference Time Anchoring**
> Explicit temporal information may override pragmatic defaults. If the previous discourse context provides an RT alternative to the pragmatic default, this RT can serve as a temporal anchor for the time variable of the sentence.

The proposal for explicit pragmatic principles governing temporal interpretation by Smith et al. (2007), Smith (2008), and Mucha (2015) offers a possible explanation of how temporal reference can be derived in clauses with underspecified subject markers in Oceanic languages.

7.2.3 Semantic underspecification and pragmatic competition

In Section 7.2.2, we focused on deriving the semantics of temporal interpretation in languages which lack any morphological expression of tense or, in some cases, any TMA categories. In this section we turn to the cases when a language has morphological marking of TMA, but one of the categories is in a pragmatic competition with another TMA category. I focus on implicated presuppositions (Heim, 1991; Sauerland, 2008), which have been argued to play a role in deriving the meaning of certain semantically unmarked TMA categories (e.g. Sauerland, 2002; Schlenker, 2005).

Implicated presuppositions are presuppositions which arise through the pragmatic blocking principle Maximize Presupposition (28) proposed by Heim (1991). This principle says that when we have two alternative morphemes, the one that has a stronger presupposition must be used whenever its presupposition is satisfied. In order to illustrate this, let us look at example (29) as Heim's (1991) motivation for proposing this principle. Heim (1991) follows Hawkins (1981) in analyzing the indefinite article *a* through its pragmatic competition with its lexical alternative, the indefinite *the*. She analyzes the definite *the* as having a presupposition of uniqueness (cf. the interpretation of unique father in (30)), while the indefinite *a* does not have that presupposition (29). This forms an implicational scale ⟨the, a⟩ in which *the* is more semantically specified and more informative (strong) in comparison to *a* (weaker), which means that due to Maximize Presupposition *the* should be used whenever its presupposition is satisfied in the common ground, i.e. knowledge shared by speakers in the context. On the other hand, whenever the presupposition of the stronger item is not a part of the common ground, the weaker item, *a* in this case, is used. This implicates that the presupposition of the stronger item is not true, or not known to be true by the speaker. Based on this, by using the indefinite *a* in (29), the presupposition of a unique father is due to Maximize Presupposition (28) considered to be either false or uncertain, which results in an interpretation that the victim does not have a unique father.

(28) Maximize Presupposition: Make your contribution presuppose as much as possible! (Heim, 1991)

(29) #A father of the victim arrived at the scene. (Sauerland, 2008)

(30) The father of the victim arrived at the scene.

Sauerland (2008) argues that Heim's (1991) approach outlined above can be generalized and applied to different sets of lexical alternatives, including {the, every, a, both}, {believe, know}, {SG, PL}, {SPEAKER, HEARER}, {PRESENT, PAST}. For instance, Sauerland et al. (2005) argue that plural is semantically unmarked, as it can refer to either singular or plural entities, cf. 'children' in (31) can refer to a singular or a plural number of children. In his account, the meaning of plurality of the plural category is derived as an implicated presupposition deriving from the pragmatic competition between plural and singular, resulting in the meaning that the singular reference is false or uncertain.

(31) You're welcome to bring your children. (Sauerland et al., 2005)

Sauerland (2002) also offers a short proposal for analyzing the present tense in English as semantically unmarked and he derives its typical present reference from competition with past tense (see also Vennemann, 1983). He bases this proposal on the fact that present can be used even when the temporal reference is in the past, as examples (32) and (33) could both be truthfully uttered after the last Tuesday of "this month", putting the event of fasting in the past. He suggests an analysis where the past has the meaning of "presupposes that t is before the time of utterance" (Abusch, 1997) and the present tense is semantically unmarked with no presupposition. Thus, by applying Maximize Presupposition, the usage of present gives rise to an implicated non-past presupposition.

(32) Every Tuesday this month, I fast.

(33) Every Tuesday this month, I fasted.

I now turn to the applications of this pragmatic principle in the area of mood, regarding the pragmatically derived meaning of the subjunctive (Schlenker, 2005). Schlenker (2005) analyzes the subjunctive in French as a semantic default, which is in competition with other moods, such as the imperative and the infinitive. The main argument for this is that, although subjunctive is expected to occur in certain environments based on its modal semantics, it does not occur there because other moods, such as imperative, indicative or infinitive are morphologically available and, thus, occur in that environment. Schlenker (2005) provides examples (34) and (35) to show that subjunctive is used with an imperative meaning only in 3SG for which there is no morphologically available imperative form.

(34) *Que votre Altesse* ***soit*** *prudente!*
That your Highness be:SBJV cautious!
'Let her Majesty be cautious!' (Schlenker, 2005:11)

(35) #*Que tu* ***sois*** *prudent!* /#***Sois*** *prudent!*
That you be:SBJV cautious! /Be:2SG:IMP cautious!
Intended: 'Be cautious!' (Schlenker, 2005:11)

Schlenker (2005) shows several modal environments in French in which subjunctive is not morphologically available. He explains the absence of subjunctive by assuming that other available cate-

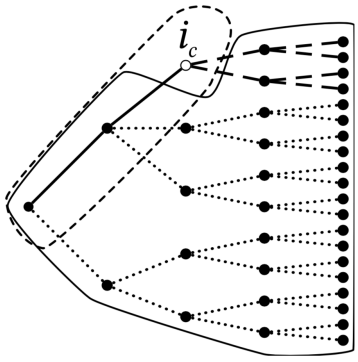

Figure 7.6: The temporal modal domains of the realis marker (dashed outline) and the distal marker (solid outline) by von Prince (2018d)

gories, such as imperative, infinitive, or indicative are more semantically specified and informative than subjunctive. Since subjunctive is semantically underspecified, it derives its meaning through an implicated presupposition via pragmatic competition with other moods.

Another pragmatic approach is held by von Prince (2018d), who studies the competition between the distal and the realis marker, which are in paradigmatic opposition in Daakaka, and shows that it cannot be explained through Maximize Presupposition. The realis and the distal marker overlap in expressing the meaning of actual past, but they differ in that realis can also express present reference, and distal also has modal counterfactual meanings, as represented in Figure 7.6 based on the model of realis/irrealis from Section 7.1.3. Since neither of the two markers logically implies the other, the two expressions do not form a scale, and we cannot establish a competition between stronger and weaker alternatives (von Prince, 2018d). However, the meaning of realis is more restricted than distal because it refers to the actual past and present world, while the distal includes the actual past as well as any number of past counterfactual worlds. In order to explain the preference of using realis over distal when it comes to the expression of the actual past, von Prince (2018d) proposes a pragmatic principle of simplicity, inspired by the simplicity principles by Smith et al. (2007) and Mucha (2015):

> **Simplicity Principle of Production**:
> Always choose the TAM marker quantifying over the narrowest possible modal-temporal domain.

This principle aims to explain the preference for the more specific realis marker in comparison to the distal as a more underspecified marker, but without considering them as alternatives of each other. von Prince (2018d) additionally expands the simplicity hierarchy by Mucha (2015) to counterfactual past/present/futures, which are according to von Prince (2018d) placed lower than the future in the hierarchy. In other words, the counterfactuals are even more complex than the future. This makes it less preferable to choose a marker that can also denote the counterfactual reference in the actual past context (when the meaning of actual past is intended), if another more specific non-modal marker is available.

The concept of pragmatic competition between two categories, studied in this section, bears importance for the cases of semantic underspecification in Oceanic languages. In Chapters 8 and 9 I discuss and apply certain concepts from proposals presented here to explain the observed facts in Nafsan and other Oceanic languages.

7.3 Realis/irrealis mood or non-future/future tense?

In this section I focus on the issue of distinguishing the realis/irrealis mood from the non-future/future tense analysis in Oceanic languages. I discuss some of the choices made in labeling of these categories in the literature on Oceanic languages and the criteria used by linguists for distinguishing tense from mood.

In some language descriptions of Oceanic languages, we find the usage of the label "non-future/future", even when there is some indication of possibly modal meanings being expressed by the future. For instance, besides expressing the relative future reference, in Arosi (Makira, Solomons) and Vinmavis (Malakula, Vanuatu) future marking is also used in imperatives (Lynch et al., 2002). In Toqabaqita, the future subject markers are used in some of the typical irrealis context, such as counterfactuals, purpose and complement clauses, and apodoses of conditionals (Lichtenberk, 2008), as shown by the multiple modal translations of the future marker in (36).

(36) *Wela naqi ki* ***keki*** *fanga.*
child this PL 3PL.FUT eat
'The children will/should/must eat.' (Lichtenberk, 2008:851)

In both Arosi [aia] (Makira, Solomons) (Lynch et al., 2002) and Toqabaqita (Lichtenberk, 2008), the non-future subject markers are semantically underspecified. The following quotation from Lichtenberk (2008:677,679) describes the distribution of the future and non-future markers in Toqabaqita:

> "The non-future markers are used to encode not only past and present situations, but occasionally also future situations, especially situations that are imminent, about to obtain. And they are also used in positive imperatives. The future markers are used to encode future situations, but they also function, jointly with another particle, to encode counterfactual past situations. Furthermore, the same set of subject-tense markers that signals future tense is also used to express the imperfective aspect: habitual and general events, and events in progress, including such events in the past.
>
> [...]
>
> Future-tense marking is required or is an option in certain syntactic environments that involve irrealis contexts; for example, in complement clauses embedded under certain verbs, such as 'want'; in clauses expressing purpose; in the apodoses of conditional sentences; and in clauses encoding unfulfilled past situations."

Judging from this definition of non-future/future markers in Toqabaqita, we can assume with some certainty that they could also be described as markers of mood. Although an in-depth analysis

of the language would be necessary to confirm this, appearing in past counterfactual situations is not a characteristic of a future marker, but it *is* a characteristic of an irrealis marker. Lichtenberk (2008) also mentions the appearance of this set of subject markers in past habituals, a context that has been related to irrealis markers, but would on most accounts be incompatible with future tense. Examples (37) and (38) show the appearance of the future subject markers in a counterfactual wish and a past counterfactual conditional, respectively. Taking in consideration that the non-future markers can be used in immediate future (quotation above) and protases of counterfactual conditionals, Toqabaqita's non-future markers might simply be subject markers underspecified for TMA, as discussed in Section 7.2.1 for Unua.

(37) *Nau ku thathami-a wela nau ki* ***sa keki*** *qadomi nau faafi-a raa nau ki.*
1SG 1SG.NFUT want-3.OBJ child 1SG PL IRR 3PL.FUT help 1SG concerning-3.OBJ work 1SG PL
'I wish my children would help me with my work (lit.: works).' (Lichtenberk, 2008:1003-4)

(38) *Ma=****sa*** *qo qaa∼qadomi nau,* ***kwai*** *qadomi qoe.*
or=IRR 2SG.NFUT RED∼help 1SG 1SG.FUT help 2SG
'If you had helped me, I would have helped you.' (Lichtenberk, 2008:1120)

Coming back to examples (37) and (38), we can see that there is an additional irrealis marker *sa* in both of them. Although Lichtenberk (2008:1119) analyzes *sa* as an irrealis marker contributing the counterfactual meaning in these examples, the future markers would still need to agree with that meaning situated in the past, which would not be expected from a future marker. Ultimately, the fact that there is the additional irrealis particle in Toqabaqita might have been the reason why Lichtenberk (2008) chose a tense label for the subject markers. This seems to be a recurrent problem when choosing labels in language descriptions, in particular in languages with rich TMA systems, whose markers are semantically very similar. Ridge (2019), in her study of Vatlongos (Southeast Ambrym, Vanuatu), encounters a similar problem. In the realis domain, Vatlongos has a prior and non-future marking, and within the irrealis domain it exhibits immediate future, distant future, apprehensive, imperative, and prohibitive markers. The immediate and distant future meanings occur in fact in many similar modal contexts, but since the temporal domain is the only area in which the two markers contrast semantically, Ridge (2019) opted for an analysis of tense rather than mood. These cases show that linguistic categories in individual languages are often a result of identifiable language-internal contrasts rather than cross-linguistically postulated TMA categories.

Barbour (2011) discusses different criteria for determining whether the portmanteau subject markers denote realis/irrealis mood or non-future/future tense in Neverver (Malakula, Vanuatu). Table 2.2 in Section 2.2 outlines the subject marker and mood paradigms in Neverver. Barbour (2011) discusses several meanings attributed to irrealis in the literature and focuses on meanings or constructions which served as decisive criteria for Neverver. I outline here three most relevant points for our discussion. The first one has to do with imperatives and prohibitives (39), which she analyzes as "unrealized" and therefore a sign of irrealis, and not future tense. The second one are the protases

of counterfactual conditionals (40), which are "unrealized" possibilities in the past, and should thus be expressed by irrealis markers and not future tense. And lastly, by looking at false beliefs and indefinite relative clauses (41), which qualify as unrealized because they have no referent in the actual world, Barbour (2011) shows that Neverver indeed has a category of irrealis and not future tense. Although many meanings that serve as evidence for the irrealis analysis in Neverver are debated in the literature, it is clear that when a given marker appears in an overwhelming number of different contexts expressing possibilities with different temporal references, as in Neverver, there is good evidence to analyze it as encoding mood.

(39) ***Kum**-khan ibiskham!*
2IRR.SG-eat one
'Eat one!' (Barbour, 2011:207)

(40) *Besi **abit**-lav∼lav si kek ang im-bbu tuan ei.*
if 3IRR.PL-get∼get NEG cake ANA 3IRR:SG-go LOC.PERS 3SG
'If only they hadn't assigned the cake (making) to him.' (Barbour, 2011:212)

(41) *Ei i-khan si navuj ibi-skham.*
3SG 3REAL.SG-eat NEG banana 3IRR.SG-one
'He didn't eat a (~~future~~/nonactualized) banana. (Barbour, 2011:216)

The issue of distinguishing tense from mood is also relevant for Nafsan. In his Honors thesis, Bacon (2013) argues that Nafsan should be reanalyzed as having the non-future/future distinction instead of realis/irrealis for several reasons, including the fact that an epistemic marker typically combines with "realis", "realis" is available in conditionals and counterfactuals, and negation also occurs with "realis" and not irrealis. The next chapter deals with these and other questions by offering a fine-grained analysis of the portmanteau subject markers that were labeled as realis and irrealis in Nafsan by Thieberger (2006).

Chapter 8

Realis and irrealis in Nafsan

In this chapter I identify problems in the current analysis of the realis and irrealis mood in Nafsan and provide semantic reanalyses of this distinction, based on a detailed study of the distribution of fine-grained meanings encoded by the realis/irrealis subject proclitics in Nafsan.

8.1 Portmanteau subject proclitics

In this section I discuss the morphology of portmanteau subject proclitics in Nafsan, with the focus on those labeled as irrealis by Thieberger (2006). I discuss their diachrony and synchrony and show that, despite being partially morphologically compositional and formed on the basis of the general (realis)[1] subject proclitics, the irrealis proclitics are not productively compositional in the synchronic system, which justifies treating them as portmanteau subject markers.

In Section 2.2 I discussed several Oceanic languages with different degrees of morphological separation and fusion between the subject markers and TMA markers. For example, I classified the realis and irrealis marking in Neverver as agglutinative, with clearly defined formative elements, but also morphologically dependent and integrated in the subject marking paradigm. In Neverver, the irrealis marker appears always in the same slot and contrasts with the zero-marked realis forms (see Table 2.2 in Section 2.2). However, languages like Nafsan have portmanteau subject markers whose morphology cannot be as easily analyzed as being compositional. Table 8.1 shows a tentative morphological segmentation of subject proclitics. As we can see, the irrealis paradigm can be segmented into the general (realis) person marking followed or preceded by *k* and the perfect-agreeing paradigm follows a similar addition of *k* and final *i*. We can observe certain regularities, such as *k* being the first element in singular, and in dual occurring as the last element in irrealis and in the middle in the perfect-agreeing paradigm. In plural, *k* is again the first element in 1EXCL.PL and 2PL in irrealis and when it comes to perfect there is a lot of variation in available forms. The only person in which there is no visible morphology involving *k* in irrealis is 2SG which is, nevertheless, pronounced as [k͡p], suggesting it might have derived from a form with an initial *k*. However, these "regularities"

[1] In Section 8.3 I offer my reanalysis of realis subject proclitics (Thieberger, 2006) as general subject proclitics. In the preceding sections in this chapter I refer to them as "general (realis)".

typically apply to not more than two or three persons, and even then it is not clear what grammatical factor is governing the position of *k*. The only true regularity for the irrealis paradigm is that in the whole of dual *k* follows the general (realis) forms. Needless to say, there are no other TMA markers that follow this type of distribution and interaction with the general (realis) paradigm. Thus, we can conclude that there is no simple way of morphologically segmenting the proclitics in the synchronic system. The only conclusion we can take is that, from a diachronic perspective, the general (realis) seems to have served as the formative element to both the irrealis and the perfect-agreeing paradigm.

Table 8.1: Tentative segmentation of subject proclitics in Nafsan, based on Thieberger (2006:150)

	General (realis)	Irrealis	Perfect-agreeing
1SG	*a=*	***k**-a=*	***k**-a-**i**=*
2SG	*ku=*	*p̃a=* [k͡pa]	***k**-u-**i**=*
3SG	*i=*	***k**-e=*	***k**-**i**=*
1DU.INCL	*ta=*	*ta-**k**=*	*ta-**kai**=, ta-**i**=*
1DU.EXCL	*ra=*	*ra-**k**=*	*ra-**kai**=*
2DU	*ra=*	*ra-**k**=*	*ra-**kai**=*
3DU	*ra=*	*ra-**k**=*	*ra-**kai**=, ra-**i**=*
1PL.INCL	*tu=*	*tu-**k**=*	*tu=, tu-**i**=, tu-**koi**=*
1PL.EXCL	*u=*	***k**-o=*	*u-**i**=, **k**-o-**i**=*
2PL	*u=*	***k**-o=*	***k**-o-**i**=*
3PL	*ru=*	*ru-**k**=*	*ru-**i**=, ru-**kui**=*

From a diachronic point of view, the situation in Nafsan must be a result of complex permutations between subject markers and TMA markers. In their work on Western Oceanic languages, Ross & Lithgow (1989) show that many subject proclitics can be segmented into different TMA and person/number elements. However, the reconstruction of these forms to Proto-Oceanic is difficult, as most of the paradigms seem to be explainable only by language-specific developments, which are hard to generalize to other languages. An interesting observation is that the irrealis paradigms are typically morphologically formed on the basis of what is analyzed as realis subject markers.

Regarding the possible irrealis *k* element in Nafsan, one hypothesis of its origin is the Proto-Oceanic sequential marker **ka*, which according to Lichtenberk (2014) has developed into a future tense, irrealis, or inceptive marker in many Oceanic languages. A piece of evidence that strengthens this hypothesis is the existence of an irrealis particle *ga* in Lelepa, a neighboring language of Nafsan, situated in North Efate. Lelepa shares many lexical similarities with Nafsan, as can be seen even in grammatical elements, such as subject proclitics shown in Table 8.2. Lelepa has only one paradigm of subject proclitics, except for the 2SG with the irrealis form *p̃a=*,[2] which has the same form as in Nafsan.[3] These subject proclitics attach to the irrealis marker *ga*, as shown in (1). This type of co-occurrence of the subject marker and the irrealis marker could have led to their merging in Nafsan.

[2]The marker *p̃a=* also exists in Nguna (North Efate), with the meaning of irrealis (Schütz, 1969).

[3]The reason for the existence of a dedicated irrealis form in 2SG might be the fact that the 2SG tends to be more frequent

This is further supported by the fact that Nafsan lost all the final vowels still attested in Lelepa, as for instance *wi* 'good' in Nafsan compared to *wia* 'good' in Lelepa. Since this is a general rule in Nafsan, a form like *ta=ga* from (1) would have easily became *tag* and then *tak* in Nafsan.

(1) *Ae,* ***ta=ga*** *fan,* ***ta=ga*** *loso lau.*
hey 1DU.INCL=IRR go.IRR 1DU.INCL=IRR bathe seawards
'Hey, let's go, let's bathe down at the beach.' (Lacrampe, 2014:402)

Table 8.2: Subject proclitics in Lelepa (Lacrampe, 2014:243)

1SG	*a=*
2SG	*ku=*/ IRR *p̃a=* [k͡p]
3SG	*e=*
1DU.INCL	*ta=*
1DU.EXCL	*ar=*
2DU	*kar=*
3DU	*ar=*
1PL.INCL	*tu=*
1PL.EXCL	*ur=/au=*
2PL	*kur=*
3PL	*ur=*

These diachronic observations show why it is hard to meaningfully morphologically separate the TMA-marking elements from the person/number-marking elements in Nafsan in the synchronic system. Given that in the synchronic system the morphological formation of the irrealis and perfect-agreeing subject markers is relatively intransparent, the best approach is to treat them as portmanteau subject markers. The purpose of this tentative diachronic discussion was to show that the appearance of diachronic TMA markers as deeply integrated in the subject marking system as in Nafsan cannot be explained by postulating that we are dealing solely with subject markers which happen to be restricted to certain contexts, as suggested by Cristofaro (2012) in her criticism of portmanteau subject markers (see Section 7.1.2). In the following sections I focus on the semantics of the general (realis) and irrealis subject proclitics in Nafsan.

8.2 Challenges for the analysis of realis and irrealis in Nafsan

In this section I present the main challenges for the analysis of realis/irrealis subject proclitics in Nafsan, stemming from the description by Thieberger (2006) and the initial analysis of the Nafsan corpus. I limit my focus to the challenges addressed in this work and thus restrict my claims in the thesis to these particular questions. The choice of these research questions was guided by the

in irrealis contexts (Meyerhoff & Holcroft, 2019).

overarching question of whether subject proclitics in Nafsan encode the realis/irrealis distinction. For this reason, the TMA markers that combine with them are analyzed only in terms of how they contribute to the realis or irrealis interpretation.

Analyzing the subject proclitics as realis and irrealis by Thieberger (2006) explains a large number of their occurrences, as the general (realis) subject proclitics tend to be interpreted as past or present referring to actual world, as shown in (2) with a past reference and (3) with an imperative and future interpretation (see also Section 2.3.1). However, there are many challenges for the analysis of realis and irrealis if we look at more semantic contexts. The main challenge for the analysis of the general (realis) subject proclitics as denoting realis mood is their occurrence in contexts denoting possible future and counterfactual meanings, which belong to the irrealis domain (see Section 7.1.3). In this section I focus on a few cases exemplifying this problem. As shown in Section 2.3.1, Thieberger (2006) notes that the conditional and possibility markers *f* and *fla* obligatorily occur with the general (realis) subject proclitics instead of irrealis. Example (4) shows the usage of the general (realis) forms of subject proclitics with the marker *fla* 'might', as well as the usage of the general (realis) forms with future reference indicated by the adverbial *matol* 'tomorrow'. These meanings belong to the irrealis domain and are not expected to be compatible with realis markers. Bacon (2013) also argues that the fact that the epistemic *fla* 'might' requires realis and not irrealis suggests that we are dealing with the distinction of future/non-future tense and not mood. According to Bacon (2013), an irrealis marker should be able to express epistemic meanings and since he does not find evidence that it does so in Nafsan, he proposes reanalyzing the irrealis subject proclitics as denoting future.

(2) *me malpei kotkot* ***a****=mes naor laap.*
but before really 1SG=play place many
'but in those days I played at lots of places.' (063.083)

(3) ***p̃a****=leperkat-i-ø* ***ka****=fo wat-gi-k*
2SG.IRR=look.out-TS-3SG.OBJ 1SG.IRR=PSP.IRR hit-TR-2SG.OBJ
'You look out, I am going to hit you.' (013.021)

(4) *Ko* ***ru****=fla,* ***ru****=fla, mees* ***i****=fla ta nom,* ***i****=fla ta nom mau,*
or 3PL=might 3PL=might today 3SG=might NEG1 finish 3SG=might NEG1 finish NEG2
matol ***ru****=mai, pkaskei pa pnut nawesien gar.*
tomorrow 3PL=come same go close work 3P.BEN
'And if it is not finished today, if it is not all done, tomorrow they'll come to their work.' (085.017)

Different kinds of possibilities are often expressed by general (realis) subject proclitics in the Nafsan corpus, alone or in combination with modal markers, such as *f* and *fla*. For instance, example (5) describes a mere possibility of the speaker going to war in Solomon islands. However, each verb is marked with general (realis) subject proclitics, and one of them combines with the modal marker *f*. The most striking usage of "realis" is in the protases of conditional clauses, including counterfactual conditionals, as in (6) where the general (realis) proclitics combine with the conditional marker *f*. Thus, the challenge regarding *f* and *fla* lies in explaining why a) "realis" combines with modal

markers, and b) irrealis does not occur with these modal markers. Both issues bear relevance for our analyses of the Nafsan subject proclitics as encoding a category of mood. The implications of the co-occurrence of realis proclitics with *f* and *fla*, as well as with other modal markers, are discussed in more detail in following sections.[4]

(5) *Nafkal me* ***a=pa,*** ***i=f*** *pi nmaten.* ***A=mat*** *kat kantri.*
war but 1SG=go 3SG=might be funeral 1SG=die bite country
'If there is a war I will go, it might be (my) funeral. I could die for the country.' (040.012, 040.013)

(6) ***Ru=f*** *to nigmam traus-i-ø,* *ko=fo* *tae,* *me gar i=tik.*
3PL=COND HAB 1PL.EXCL.BEN tell-TR-3SG.OBJ 1PL.EXCL.IRR=PSP.IRR know but 3PL 3SG=NEG
'If they had told it to us, we would know, but they didn't.' (Thieberger, 2006:259)

Thieberger (2006:304) also describes irrealis as occurring in different types of complement clauses expressing possibilities, such as evaluative and desiderative clauses (see Section 2.3.1), as shown in (7) and (8) with *wi* 'be good' and *mur* 'want' as main verbs and irrealis proclitics in the complement clauses, respectively. However, there are several cases in the Nafsan corpus in which the complement clause of a desiderative clause has general (realis) subject proclitics, as shown in (9). This poses a puzzle because there is no obvious governing factor for choosing realis over irrealis in desiderative clauses. These issues regarding both desiderative and evaluative clauses are tackled in Section 8.6.2.

(7) *i=****wi*** *na akit* ***tuk=****pei* *infom-ki sesin.*
3SG=good COMP 1PL.INCL 1PL.INCL.IRR=first inform:BI-TR session
'It is good that we inform the session (of the church).' (Thieberger, 2006:309)

(8) *ru=****mur-i-n*** *na* ***ruk=****welu ser mal akit.*
3PL=want-TS-3SG.OBJ COMP 3PL.IRR=help every time 1PL.INCL
'They always want to help us.' (119.015)

(9) *i=lek-a-ø* *na elau i=mat* *top i=semsem* *i=****mur*** *nag* ***i=****siwer*
3SG=look-TS-3SG.OBJ COMP sea 3SG=low.tide big 3SG=happy 3SG=want COMP 3SG=walk
ur nskau.
along reef
'He saw that the tide was out. He was happy, he wanted to walk along the reef.' (101.010)

Another issue is the expression of false beliefs by complement clauses, as shown in examples (10) and (11) with complement clauses expressing beliefs shown to be false in the context. Despite their similar semantics, examples (10) and (11) differ in their choice of mood, (10) with general (realis) proclitics and (11) with irrealis proclitics, with no discernible difference in their interpretations of counterfactuality caused by false beliefs.

[4]Note that it has been shown in the literature that protases of conditionals can lack mood marking (e.g. Haspelmath, 2014), which is compatible with Ramsey condition for conditionals, which refers to a preliminary increase of the assumptions made, with respect to which then an assertion is made (Ramsey, 1931). This observation is consistent with my analysis of the general (realis) proclitics as semantically underspecified for mood in Nafsan, see Section 8.3.

(10) *u=**mro-ki-ø*** *na* ***i**=sa* *me mees u=po* *pa*̃*or-i-ø*
1PL.EXCL=think-TR-3SG.OBJ COMP 3SG=bad but today 1PL.EXCL=PSP.REAL find-TS-3SG.OBJ
na i=po i=wi
COMP 3SG=PSP.REAL 3SG=good
'we thought it would be bad, but today we find that it is good.' (068.021)

(11) *a=**mro-ki*** *nen* ***ka**=fei* *ler me elau ki=pe* *mu top*
1SG=think-TR COMP 1SG.IRR=first return but sea 3SG.PRF=PRF high.tide big
'I thought I could get back but the tide was too high.' (101.041)

As we could see in this section, identifying challenges regarding the realis/irrealis distinction in Nafsan revolves around analyzing the subject proclitics used in different contexts of meaning pertaining to the realis and irrealis domains. The main issue in the Nafsan data is the occurrence of general (realis) proclitics in contexts that express reference to non-actual worlds and would be expected to require irrealis. This poses a problem for the definition of both realis and the irrealis mood as encoded by the subject proclitics in Nafsan. These issues are discussed in the following sections.

8.3 The distribution and meaning of realis and irrealis

In this section I analyze the basic distribution of general (realis) and irrealis proclitics in the Nafsan corpus and my fieldwork data and argue for initial analyses of their meanings.

8.3.1 Combinations with TMA markers and the underspecification of realis

In this section I present the combinations of the subject-marking paradigms labeled as realis and irrealis (Thieberger, 2006) with TMA markers, as they are attested in the Nafsan corpus (Thieberger, 1995–2018) and my fieldwork data (Krajinović, 2017b). I use the presented data to argue for an initial analysis of the realis paradigm as a general subject marking underspecified for mood. In the following sections more specific modal contexts will be analyzed and used to support and expand this analysis, and Section 8.7 offers a theoretical pragmatic account of the underspecification of realis.

As shown in Section 8.2, the combinations of subject proclitics and TMA markers can provide important insight into the meaning of subject proclitics as encoding the realis/irrealis distinction. A good way of creating an overview of all combinations of subject proclitics and TMA markers is to quantify their occurrences in the corpora. This way, the TMA markers also serve to establish clear and quantifiable TMA contexts which would otherwise require additional annotations of the corpora. In order to quantify these occurrences I selected only the markers in the TMA slot, which immediately follow the subject proclitics (see Section 2.3.2), namely the perfect *pe* (PRF), prospective realis *po* (PSP.REAL), prospective irrealis *fo* (PSP.IRR), counterfactual conditional *f mer* (COND.CF), and *fla* 'might'. For the purposes of this particular quantification, in the case of the marker *f* I limited my search to the cases in which it combines with the counterfactual marker *mer* in order to capture the counterfactual conditional meaning as isolated from other meanings of *f*, discussed in Section 8.5. The quantification was performed by a simple Python program that searches and counts the co-

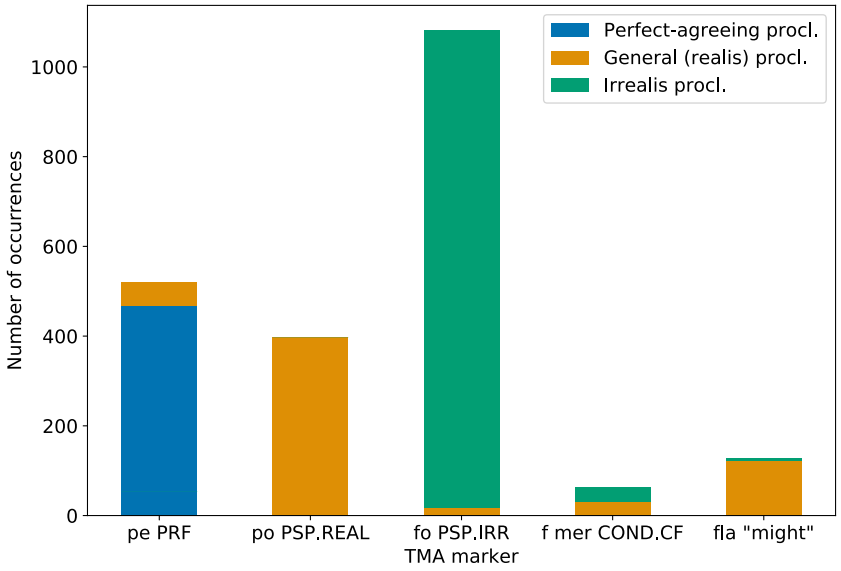

Figure 8.1: Co-occurrences of subject proclitics and TMA markers in two Nafsan corpora

occurrences of each of the subject proclitics and the TMA markers. I then applied this program to the Nafsan corpus (Thieberger, 1995–2018) as well as my storyboard corpus (excluding meta-linguistic elicitation). The co-occurrences from the two corpora were added and are shown in Figure 8.1.

We can see that the irrealis and perfect subject proclitics occur with the markers that match their TMA values: the prospective irrealis *fo*, the counterfactual conditional *f mer* and *fla* combine with irrealis and the perfect *pe* combines with perfect-agreeing proclitics. However, none of these markers combine only with irrealis or perfect proclitics, because they can also felicitously combine with the general (realis) proclitics. In some cases general (realis) is in fact preferred, as with *fla*, and in others irrealis is largely preferred, as with the prospective irrealis *fo*. The prospective realis *po* is the only marker that accepts only one paradigm of proclitics – the general (realis) one. This is expected because the prospective realis meaning would not be compatible with irrealis and perfect-agreeing meanings (see Section 5.3.1). This initial picture of the distribution of the subject proclitics is crucial for choosing how to approach the challenges for the analysis of realis/irrealis in Nafsan, outlined in Section 8.2. Figure 8.1 shows us that the general (realis) proclitics are not only interchangeable with irrealis proclitics in certain contexts, but also with perfect-agreeing proclitics. This was already discussed in Section 5.1.1, where I showed that the general (realis) proclitics can combine with the perfect *pe* in all perfect contexts, including those with future reference, as shown in (12) repeated from Section 5.1.1. There are also other cases of the general proclitic being used with future reference, as in (13) from the Future Questionnaire.[5] This shows that the general (realis) proclitics are not restricted to the past and present reference of the actual world.

[5]The choice of the general proclitic might be related to the choice of the temporal adverb. Examples including 'in a few minutes', 'in the evening', and 'tomorrow' were produced with irrealis and the prospective irrealis *fo*.

(12) *Malnen p̃a=ler,* ***a=pe*** *mtir natus su.*
when 2SG.IRR=return 1SG=PRF write letter PFV
'When you come back, I will have finished writing the letter.' (AK1-083-01, based on Dahl 2000b:FQ 17)

(13) [There are black clouds in the sky.] It RAIN (very soon). (Dahl, 2000b:FQ 47)

Us ***i=wo*** *pelpel.*
rain 3SG=rain soon
'It will rain soon.' (AK1-086-01)

The protases of counterfactual conditional clauses with *f mer* have more or less equal chances of having general (realis) or irrealis proclitics, with 30 and 32 occurrence in total, respectively. Examples (14) and (15) (repeated from Chapter 1) as future counterfactual conditional clauses, show both options attested in the storyboard data. The combinations with the marker *f* are also interesting in that the co-occurrence with irrealis proclitics is restricted only to proclitic forms ending in a vowel, due to phonetic restrictions. This is discussed in more detail in Section 8.5.1.

(14) ***a=f*** *mer mes matol, go nfag nen kin a=tai nakn-i-k ke=fo*
1SG.=COND CF play tomorrow and sore REL COMP 1SG=cut finger-V-1SG.DP 3SG.IRR=PSP.IRR
mer makot
again break
'If I played tomorrow, the sore I cut on my finger would bleed again.' (AK1-098-01, 00:03:39.185-00:03:57.063)

(15) ***ka=f*** *mer mes volibol matol, nakn-i-k ke=fo mra*
1SG.IRR=COND CF play volleyball tomorrow finger-V-1SG.DP 3SG.IRR=PSP.IRR bleed
'If I played volleyball tomorrow, my finger would bleed.' (AK1-004-01, 00:03:27.921-00:03:33.286)

Given that the prospective markers are the only TMA markers encoding the realis/irrealis distinction themselves, it is strange that we find some occurrences of the general (realis) proclitics and the prospective irrealis *fo* (see below the explanation of the semantics of *fo*). Examples (16) and (17) show two such cases from the Nafsan corpus. One important observation regarding example (16) and others with similar forms is that Nafsan has the tendency to lose the pronunciation of velars in coda position (Billington et al., submitted). Thus, the irrealis form *ruk* can occasionally be pronounced as *ru*, which is the general (realis) form. This would mean that the phonological representation of *ru=fo* in (16) is in fact *ruk=fo*. This explanation can account for almost all occurrences of *fo* with general (realis) proclitics, but it does not account for (17), in which case the 1PL.EXCL irrealis proclitic would have the form *ko=*. Thus, there must be another explanation for the very few cases like *u=fo* in (17), because in elicitation speakers routinely reject the combination of general (realis) proclitics which are not eligible for the deletion of *k* and *fo*. Nevertheless, they accept the proclitics with the elided *k*, cf. recordings AK1-111-01 and AK1-112-01. In any case, the fact that phonological effects can occasionally result in the loss of distinctions between realis and irrealis even with the marker which denotes irrealis itself, is a strong indicator of just how easy it is to develop complex correspondences

between the phonological form and the meaning of subject proclitics.

(16) *Teesa ru=pak ektem* ***ru=fo*** *tae nafte kin i=wi ga nafte kin i=sa.*
children 3PL=go.to outside 3PL.PSP.IRR know what COMP 3SG=good and what *comp* 3SG=bad
'Children go outside and will know what is good and what is bad.' (085.008)

(17) *go komam* ***u=fo*** *paakor-wes ki* ***u=fo*** *mer tm̃alu naur*
and 1PL.EXCL 1PL.EXCL=PSP.IRR arrive-3SG.OBL DEM 1PL.EXCL=PSP.IRR again depart island
ki u=mer mai pak e-sa
DEM 2PL=again come to LOC-here
'And we would be born there and we would leave the island and come here.' (047.019)

Fla is a modal marker that combines almost exclusively with the general (realis) proclitics. In our corpora there are 123 occurrences with realis and only 5 with irrealis. In Chapter 8.5 I compare the case of *fla* with *f* and argue for a phonological constraint on the occurrence of *fla* and irrealis proclitics. Examples (18) and (19) illustrate a storyboard context in which one speaker used the combination of *fla* with a general (realis) proclitic and another speaker used an irrealis proclitic with the marker *fo*. The intended meaning in these examples is that of epistemic modality, which belongs to the domain of irrealis. Thus, it is surprising that realis and not irrealis proclitics combine with the epistemic marker *fla* to express this meaning.

(18) ***I=fla*** *to pi Yokon kin i=paam nawi miel gaag.*
3SG=might PROG be Yokon REL 3SG=eat yam red 2SG.POSS
'Yokon might be the one who ate your red yam.' From the storyboard "Red Yam" (von Prince, 2018e) (AK1-008-01, 00:07:43.588-00:07:48.810)

(19) ***Ke=fo*** *pi Yokon m̃as kin i=paam nawi miel nig neu.*
3SG.IRR=PSP.IRR be Yokon only REL 3SG=eat yam red of 1SG
'Yokon might be the one who ate your red yam.' From the storyboard "Red Yam" (von Prince, 2018e) (AK1-075-01, 00:01:48.008-00:01:57.326)

So far we have seen the general (realis) proclitics appearing in many modal contexts in Nafsan, including future possibilities, counterfactual, and epistemic contexts. Figure 8.2 visually summarizes the meanings expressed by the general (realis) proclitics and irrealis proclitics. As we can see, the general (realis) proclitics share many of the core modal meanings with irrealis. Since this is not a behavior we would expect from the realis mood, I propose that the evidence presented here suggests that the general (realis) proclitics are not semantically specified for realis meanings. The issues raised in this section can be better explained if the "realis" proclitics are analyzed as general subject marking of person and number underspecified for mood. This reanalysis can explain why this paradigm of subject proclitics is compatible with virtually any TMA marker and almost any TMA context. By adopting this analysis, we understand that the meanings represented in Figure 8.2 are simply compatible with the general subject proclitics, and are not semantically expressed by them (cf. similar argument in Section 5.3.2).

Another support for the underspecification analysis is the frequency of the general (realis) procl-

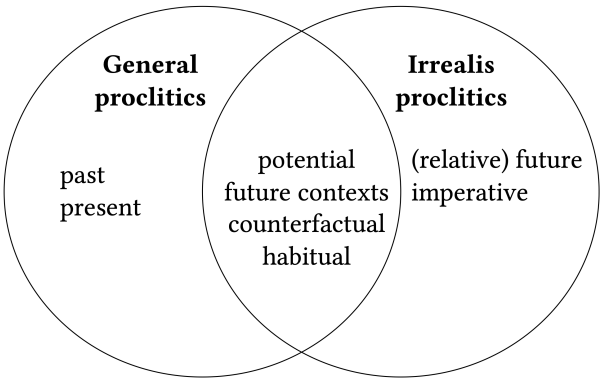

Figure 8.2: TMA meanings with which general and irrealis proclitics are used in Nafsan

itics in comparison to the irrealis and perfect-agreeing proclitics. In Thieberger's (1995–2018) corpus of Nafsan general (realis) proclitics constitute 84% (5793 occurrences) of all proclitics in corpus, irrealis 11% (782 occurrences), and perfect-agreeing 5% (308 occurrences). The fact that the general (realis) proclitics are so much more frequent than others is consistent with their appearance in more semantic contexts in comparison to the other proclitics, as shown in this section. Thus, from now on I refer to the general (realis) proclitics as "general proclitics", which are semantically defined as subject markers. In the following sections, I discuss in more detail the availability of the general proclitics in different types of conditional and complement clauses and argue for the validity of the present analysis. In Section 8.7 I offer a pragmatic explanation of how the realis meaning is derived in main clauses, and what pragmatic factors drive the usage of general proclitics with specific TMA markers such as *f* COND.

8.3.2 Irrealis proclitics

In this section I offer an overview of the distribution of irrealis subject proclitics in Nafsan and argue that they denote irrealis mood, and not future tense as suggested by Bacon (2013). I also analyze the combinations of irrealis and the prospective irrealis *fo*, as well as auxiliary verbs denoting modal meanings.

Out of all TMA markers and auxiliary verbs, the irrealis proclitics combine most frequently with the prospective irrealis *fo*, as shown in Figure 8.1 in Section 8.3.1. Irrealis occurs with *fo* whenever the expressed meaning is that of prospective aspect, which is by some linguists also analyzed as relative future (Comrie, 1985). However, the co-occurrence with *fo* only accounts for about 17% of all irrealis occurrences in the Nafsan corpus (Thieberger, 1995–2018). In the rest of the occurrences, irrealis appears either alone or with other TMA markers and auxiliary verbs. In order to understand the semantic contribution of *fo* to the overall irrealis meanings, let us analyze several contexts from

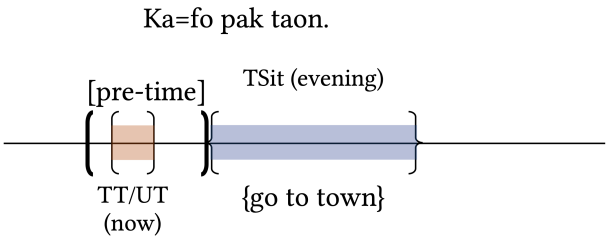

Figure 8.3: Representation of example (20)

the Future Questionnaire (Dahl, 2000b). In a main clause like (20), the prospective irrealis *fo* situates the TT (Topic Time) in the pre-time of the described event, as assumed by the prospective aspect definition by Klein (1994), and it additionally encodes irrealis mood, which means that the event does not belong to the actual world. In (20) the TT is at the same time the UT (Utterance Time) which yields an absolute future interpretation of the event, as illustrated in Figure 8.3. However, *fo* can appear with irrealis with any temporal reference, as we can see with a future and past subordinate clauses in (21) and (22), respectively. While irrealis appears alone in both subordinate temporal and conditional clauses situated in the TT, the event that follows the TT both in the past and in the future is marked by the prospective irrealis *fo*. The relationship between the two events is established by the presence of *fo* which situates the TT in the pre-time of the event marked by it. This is illustrated in Figure 8.4 for example (21). Thus, *fo* can appear with any temporal reference, as long as the described event is considered non-actual. This makes it an irrealis mirror image of the prospective realis *po* (see Section 5.3.1).

(20) [Talking about the speaker's plans for the evening.] I GO to town (Dahl, 2000b:FQ 32)
Ka=fo *pak taon.*
1SG.IRR=PSP.IRR go.to town:BI
'I will go to town.' (AK1-086-01)

(21) [The boy is expecting a sum of money] When the boy GET the money, he BUY a present for the girl. (Dahl, 2000b:FQ 13, TMAQ 103)
Malnen naturiai ***ke=****wes* *faat,* ***ke=fo*** *nig nmatuerik paakot naftuan.*
when boy 3SG.IRR=take money 3SG.IRR=PSP.IRR BEN girl buy present
'When the boy gets the money, he will buy a present for the girl.' (AK1-082-01)

(22) [The speaker knows the boy was expecting money and that he did not get it] If the boy GET the money (yesterday), he BUY a present for the girl. (Dahl, 2000b:FQ 16, TMAQ 106)
I=f-wel kin naturiai ***ke=****wes naul nanom,* ***ke=fo*** *pakot naftuan.*
3SG=COND-like COMP boy 3SG.IRR=take money yesterday 3SG.IRR=PSP.IRR buy present
'If the boy had gotten the money yesterday, he would have bought the present for the girl.' (AK1-083-01)

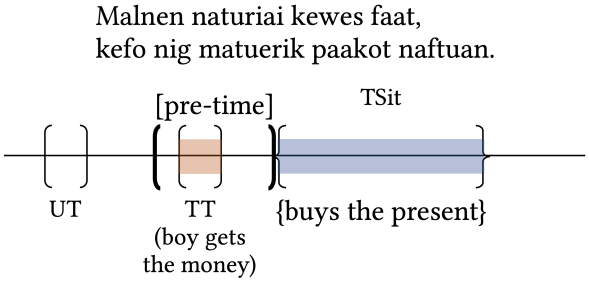

Figure 8.4: Representation of example (21)

I turn now to the semantics of irrealis proclitics. As we can see in examples (21) and (22), the irrealis proclitics in the subordinate clauses denote meanings of future and past counterfactual possibilities, respectively. Another typical context for irrealis is the imperative (23),[6] prohibitive (24), wishes (25), as well as different types of evaluative complement clauses (26). Although understanding the temporal reference of an imperative as either present or future is a debated issue (see also Barbour, 2011), imperatives (23) and prohibitives (24) denote commands which are modally different from the simply predictive meaning of future tense. Barbour (2011) also analyzes the usage of relevant markers in imperatives as an indicator of irrealis mood and not future tense. Moreover, the event marked by irrealis in example (26) has a present temporal reference and could not be interpreted as having a future reference (see also Section 8.6.2). Example (25) also expresses a desiderative meaning of the type that would not be expected from a simple future tense, which would get predictive future readings.

(23) ***p̃a**=mai totan nanu-a-k*
2SG.IRR=come sit neck-V-1SG.DP
'Come and sit on my neck.' (101.045)

(24) ***P̃a**=ta pak ektem mau!*
2SG.IRR=NEG1 go outside NEG2
'Don't go outside!' (AK1-018-01, 00:04:08.715-00:04:16.430)

(25) ***P̃a**=fo piatlak namõlien wi ser mal!*
2SG.IRR=PSP.IRR have life good every time
(wishing someone good health:) 'May you have a good life!' From (Dahl, 2000b:FQ 108) (AK1-110-01)

(26) *a=mur **ka**=to sari.*
2SG=like 1SG.IRR=HAB travel
'I like to travel.' (AK1-078-01)

The irrealis proclitics can also express present and past epistemic meanings of possibility and necessity with TMA markers and auxiliary verbs, as shown in (27) and (28) for the present and (29) for the past epistemic readings, respectively. Different types of modal force and flavor are analyzed in more

[6] Verbs without any subject marking can also express imperatives.

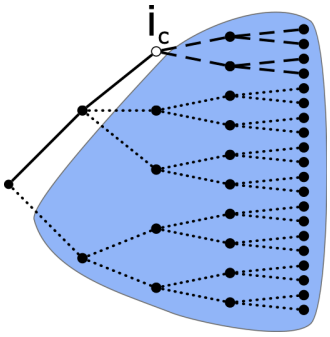

Figure 8.5: The domain of meaning expressed by irrealis proclitics in Nafsan (see model in Section 7.1.3)

detail in Section 8.4. All these different temporal and modal contexts together with the expression of modal epistemic meanings in examples (27)-(29) could not be explained by analyzing the proclitics as markers of future tense. Since in all these examples the irrealis proclitics denote different kinds of possibilities, we can conclude that there is good evidence for maintaining the analysis of irrealis proclitics as denoting irrealis mood, which refers to any non-actual worlds. The domain of the irrealis meaning expressed in Nafsan is visualized in Figure 8.5, based on the branching-times model presented in Section 7.1.3.

(27) [Context: The policemen are looking for two fugitives hiding in a house, from TFS (2011b)]
Ra=to ra=na: Me ***rak=fo*** *kus eswa?*
3DU=PROG 3DU=say but 3DU.IRR=PSP.IRR hide where
'Then they said: But where could they be hiding?' (AK1-146-06, 00:03:30.991-00:03:33.748)

(28) [Context: When you disagree about a place of an object that your friend put inside the house (could be anywhere) and you say:]
i=tik, ***ke=lakor*** *pato sanpe.*
3SG=NEG 3SG.IRR=maybe be.at there
'No, I think it should be over there.' (Gray Kaltaƀau, 30/05/2018)

(29) [Context: you saw your friend passing on the path to his garden from a distance, and when later someone asks where he is, you would say:].
Ga ***ke=mas*** *pak talm̃at pan nlaken kin a=lek-a-ø i=mai siwer pan*
3SG 3SG.IRR=must go.to garden go because COMP 1SG=see-TS-3SG.OBJ 3SG=come walk go
'He must have gone to the garden, because I saw him on the path.' (Gray Kaltaƀau, 30/05/2018)

An interesting observation about the meaning of irrealis is the contrast between the irrealis proclitic occurring alone and co-occurring with the prospective irrealis *fo*, especially in main clauses in simple out-of-the-blue contexts. When irrealis proclitics are used alone in main clauses, they receive an interpretation of immediate future (30). This is further supported by the fact that the irrealis proclitics alone cannot be used when immediacy is not intended, as in (31). In contrast, *fo*

does not have restrictions on how immediate or remote the future event is. We can see that the interpretation of irrealis with *fo* can refer both to immediate and non-immediate future events, cf. (31) and (32).

(30) [Talking about the speaker's immediate plans.] I GO to town. (Dahl, 2000b:FQ 37)
***Ka**=fak* *taon.*
1SG.IRR=go.IRR town:BI
'I'm going to town.' (AK1-086-01)

(31) [It's no use trying to swim in the lake tomorrow.] The water BE COLD (then) (Dahl, 2000b:FQ 8, TMAQ 36)
Nai ***ke**=fo* *mlanr. (*Nai* ***ke**=mlanr.)*
water 3SG.IRR=PSP.IRR cold water 3SG.IRR=cold
'The water will be cold.' (AK1-082-01)

(32) [Talking about a third person's immediate plans:] He WORK in the garden. (Dahl, 2000b:FQ 61)
***Ke**=fo* *weswes./* ***Ke**=fan* *weswes.*
3SG.IRR=PSP.IRR work 3SG.IRR=go.IRR work
'He is going to work in the garden.' (AK1-086-01)

The question here is why would a general irrealis marker be restricted to immediate future when occurring alone in these types of main clauses. Note that the immediacy interpretation does not arise in conditional and complement clauses, as well as in combination with other TMA markers and auxiliaries, presented in this section. I propose that this immediate future meaning of irrealis in cases like (30) and (32) comes from the pragmatic effect of simplicity proposed by Smith et al. (2007) and Smith (2008), described in Section 7.2.2. The reference to the utterance time is the simplest because it requires the least additional assumptions in communication. For this reason, this is the meaning that arises by default in out-of-the-blue contexts. Thus, for the irrealis proclitics which denote reference to non-actual worlds (and exclude the utterance time), the closest reference to the utterance time is the immediate future.

8.4 Modal force and flavor

In this section I describe how different modal meanings are expressed either by combinations of the general and irrealis proclitics with TMA markers and auxiliary verbs or by the irrealis alone. Different modal distinctions, such as the meanings of obligation (deontic) or inference based on our knowledge (epistemic) are called modal flavors in formal semantics. Although the basic distinction is often done between the epistemic and other meanings (called root modality), depending on the language and the theory of modality, there can be many more modal flavors, such as ability or bouletic modality (related to wishes) in formal semantics (e.g. Hacquard, 2006), or participant-internal modality in typology (e.g. Bybee et al., 1994; Nuyts & van der Auwera, 2016). Modal force refers to the distinctions between strong and weak possibility and necessity, which are considered to be the two basic distinctions of meaning in modality (e.g. Kratzer, 2012; van der Auwera & Zamorano Aguilar, 2016).

I use the storyboard elicitation data to show that there is a great deal of interchangeability between general and irrealis proclitics in combining with different modal markers in the same contexts, which supports the analysis of general proclitics as being underspecified for TMA. Although the general and irrealis proclitics are interchangeable in most modal contexts presented below, there are clear tendencies of preferring one of the proclitics for certain meanings or with certain markers. For instance, the irrealis proclitics are preferred over the general proclitic with auxiliaries *tae* 'can' and *kano* 'cannot' when expressing epistemic possibility and deontic meanings, as opposed to other modal flavors, such as ability. I also show that the distribution of general and irrealis proclitics in these different modal contexts is not governed by temporal distinctions.

Modal force and flavors were tested with several storyboards in my fieldwork. The main modal contexts from these storyboards are presented in Table 8.3. The modal flavors are labeled as circumstantial, epistemic, ability, and deontic. I use the term "circumstantial modality" to refer to any meanings that express non-epistemic possibilities or necessities, which are based on the circumstances of a described situation. Thus, they refer to different kinds of abilities and permissions/obligations, but the context is vague enough not to distinguish between ability and deontic readings. Ability as the inner capacity of the participant is considered as a specific meaning. Deontic modality refers to permissions and obligations and epistemic modality expresses the possibility or necessity of the described situation taking place, given speaker's knowledge. Each context was elicited through one or more frames in the relevant storyboards, as indicated in Table 8.3. I studied the expression of different modal forces and flavors by analyzing which TMA markers or auxiliaries were used and in combination with which proclitics. The results can be summarized as follows. There are only two markers which combine with only one set of proclitics: *mas* 'must' with irrealis and *fla* 'might' with general proclitics. Other modal markers, *tae* 'can', *kano* 'cannot', and *lakor* 'maybe', can combine with both proclitics in almost all meanings covered here, but there are some notable tendencies for preferring one set of proclitics for specific meanings. Nevertheless, there are no categorical rules that could explain why a certain proclitic is chosen over the other. It is possible that the complex picture that emerges from the Nafsan data could be made simpler by factoring in new variables, which are hard to identify through the prism of modal force and flavor at the current stage of the research. In any case, the data in 8.3 allows for certain generalizations that have impact for our understanding of the semantics of irrealis and general proclitics in Nafsan.

The auxiliaries *tae* 'can' and its negative counterpart *kano* 'cannot' express all types of possibilities analyzed in Table 8.3. Their only restriction is that they do not express necessity. When it comes to combining with proclitics, *tae* 'can' and *kano* 'cannot' exhibit very similar tendencies. When expressing circumstantial possibility and ability general proclitics are preferred, whereas irrealis is preferred for epistemic possibility and deontic meanings, cf. Table 8.3. The percentage values of the number of occurrences of *tae* and *kano* with irrealis in Table 8.3 illustrate this preference. Examples (33) and (34) show epistemic readings with present reference, in which *tae* and *kano* combine with irrealis, respectively. Examples (35) and (36) illustrate the contrast between the usage of irrealis with *kano* for deontic meanings (35) and the usage of general proclitics with *kano* for the meaning of ability (36).

Table 8.3: Summarized data of auxiliary and proclitic combinations from storyboard "On the lam" (OL) (TFS, 2011b), "Tom and Mittens" (TM) (Rolka & Cable, 2014), "Bill vs. the weather" (BW) (Vander Klok, 2013), "Chore girl" (CG) (TFS, 2011a) and "Sick girl" (TFS, 2011c)

Meaning	TMA/Auxiliary	Irrealis procl.	General procl.
Circumstantial possibility (frames OL 8, 9, 10, 11, 13)	*tae*	0	9
	kano	2	6
Circumstantial necessity (frame OL 15)	*mas*	1	0
	lakor	1	0
	Irrealis with *fo*	1	
Epistemic possibility (frames OL 18, 19, 20, 21, 22, 24, TM 6, 7, BW 18, 20, 22)	*tae*	6 (100%)	0
	kano	5 (63%)	3 (37%)
	mas	2	0
	lakor	4	7
	fla	0	8
	Irrealis with *fo*	5	
Epistemic necessity (frames OL 26, TM 10)	*mas*	4	0
	lakor	0	4
	Irrealis with *fo*	1	
Ability (frames CG 19, SG 6, 13, 20)	*kano*	1	7
Deontic (frames CG 2, 3, 4, 7, 10, SG 9, 16, 24)	*tae*	5 (83%)	1 (16%)
	kano	14 (61%)	9 (39%)
	mas	5	0
	Irrealis alone/with *fo* or AUX	8	

(33) [Context: The police is looking for two fugitives hiding in a house, from TFS (2011b)]
Te-nraan ***rak=fo*** ***tae*** *kus eswa?*
DET-two 3DU.IRR=PSP.IRR can hide where
'Where could these two be hiding?' (AK1-147-12, 00:02:53.645-00:02:58.446)

(34) [Context: The police is looks for clues for where the two fugitives are hiding, from TFS (2011b)]
Rak=fo ***kano*** *kus emrom kes, kes nen i=sesal toop.*
3DU.IRR=PSP.IRR cannot hide inside box box DEM 3SG=tiny very
'They can't be hiding in the box, that box is too small.' (AK1-147-12, 00:03:19.385-00:03:24.781)

(35) [Context: Mary's friends come and ask her to go play with them, but her mom ordered her to wash the dishes, so she says:, from TFS (2011a)]

Kineu ***ka=fo*** ***kano****, ka=fei was ki plet.*
1SG 1SG.IRR=PSP.IRR cannot 1SG.IRR=first.IRR wash:BI PREP plate:BI
'I can't go, I have to wash the dishes first.' (20170816-AK-094, 00:00:57.995-00:01:07.171)

(36) [Context: Mary's friends come and ask her to go play with them, but she broke her leg, so she says:, from TFS (2011c)]

Kineu ***a=kano****, Mary i=tl-i-ø, nlaken a=p̃akot natu-o-k.*
1SG 1SG=cannot Mary 3SG=say-TS-3SG.OBJ because 1SG=break leg-V-1sg.DP
'I can't, says Mary, because I broke my leg.' (20170731-AK-016, 00:01:04.545- 00:01:17.645)

The preference of irrealis for deontic meanings was also confirmed in the elicitation of example (37) from the *Nondum* questionnaire, which prompted two modal interpretations in (38) and (39). The comments in parentheses in both examples were made by the speaker. (38) has a deontic interpretation with irrealis and (39) has an ability reading with the general proclitic.

(37) (Q37) (I didn't know your neighbor is already 30 years old. Is he married?) He NOT MARRIED (because he is a Catholic priest, so he can't marry) (Veselinova, 2018)

(38) *Ga* ***ke=fo*** ***kano*** *lak.*
3SG 3SG.IRR=PSP.IRR cannot marry
'He can't get married.' (because he is a priest and it is forbidden) (AK1-156-04)

(39) *Ga* ***i=kano*** *lak.*
3SG 3SG=cannot marry
'He can't get married.' (because for some personal reason you are not able to get married) (AK1-156-04)

Since the general and irrealis proclitics can both occur in most modal contexts with *tae* and *kano*, we could ask whether there is another TMA meaning that could be governing their distribution, such as temporal reference. However, examples (33)-(36) all refer to possibilities at the present and not future time. This shows that irrealis could not be reanalyzed as future tense, and that its appearance in these meanings is related to its meaning of irrealis mood. Another important observation is the fact that irrealis alone or with the prospective marker *fo* can also denote circumstantial and epistemic possibilities, as well as deontic meanings. Examples (40)[7] and (41) show epistemic readings with past and present reference, respectively, and (42) a deontic reading. The usage of irrealis proclitics alone for asking for permission has also emerged during elicitation, as shown in (43). The fact that irrealis can express different modal flavors and force without combining with any specific modal auxiliaries denoting modal force and flavor shows that its semantics comprises these modal meanings. Crucially, this leads us to conclude that the irrealis meaning in Nafsan refers to both

[7]This example can also be analyzed as expressing an undesirable past possibility, which can be labeled as timitive or apprehensive, commonly found as a grammaticalized category in Oceanic languages (Lichtenberk, 1995), see also von Prince et al. (2019b,c).

mood and modality, categories which are typically considered as separate in semantic theory and in Indo-European languages (cf. Matthewson, 2010).

(40) [Context: From Vander Klok (2013), Bill brought a coat to work yesterday, but it was warm and sunny. His friend asks him why he brought the coat despite good weather]
Me nlaken sno ***ke=fo*** *mai malnen kin a=to naor nawesien.*
but because snow:BI 3SG.IRR=PSP.IRR come when COMP 1SG=stay place work
'Because it could have snowed while I was at work.' (AK1-062, 00:05:24.576-00:05:36.386)

(41) [Context: The police is looking for clues for where the two fugitives are hiding, from TFS (2011b)]
Rak=fo *nru kus nanre lukor ni nmetklas.*
3SG.IRR=PSP.IRR two hide behind curtain of window
'They must be hiding behind the curtain.' (AK1-146-06, 00:04:24.565-00:04:29.376)

(42) [Context: From TFS (2011a), Mary's friends come and ask her to go play with them, but her mom ordered her to sweep inside the house, so she says:]
Go i=tl-i-ø na ke=fo kano pan mes nlaken ***ke=fei***
and 3SG=say-TS-3SG.OBJ COMP 3SG.IRR=PSP.IRR cannot go play because 1SG.IRR=first.IRR
broom ur em̃rom esum̃.
sweep:BI along inside house
'And she said she can't go to play because she first has to sweep inside the house.' (AK1-019, 00:06:38.555-00:06:46.826)

(43) ***Ka=****mtir?*
1SG.IRR=write
'Can I write here?' (AK1-086-01)

There are a few possible concerns that need to be discussed regarding the usage of irrealis in examples (40)-(43). The first is that the prospective irrealis sets the Topic Time in the pre-time of the described event (see Section 8.3.2), which leads to the interpretation of a future relation between the Topic Time and the event. It could be argued that the irrealis and *fo* in (40) and (41) denote this future meaning. Example (40) could then be understood as 'snow would fall while I was at work' with a meaning of relative future and (41) as 'they will be hiding behind the curtain' with a future predictive meaning. A similar concern can be raised about examples (42) and (43), where the irrealis proclitics alone could be interpreted as immediate future (see Section 8.3.2), yielding a meaning like 'she is first going to sweep inside the house' and 'will I write here?'. However, examples (40)-(42) were produced in storyboards in which the context clearly required the epistemic and deontic readings, which were also repeated several times throughout the story. The speakers were familiarized with the story in Bislama and understood the targeted contexts (for more details see Chapter 3).[8] Thus, even if the prospective irrealis *fo* contributes some kind of future meaning, as per its semantics, in (40) and (41), the fact that the epistemic and deontic readings are still available and intended in the cited examples tells us that irrealis needs be used to express these modal flavors. For instance, it is clear in the context

[8]Whenever there was a reason to doubt speaker's understanding or the clarity of the intended context, the produced storyboards were not considered in these results.

of example (40) that it did not in fact snow when Bill was at work, so that was a mere possibility and not a prediction for how the future will unfold. This irrealis and prospective combination was chosen by 2 out of 8 speakers who produced the frame of (40) in the storyboard "Bill vs. the weather" (for other speakers see Section 8.6.2). Similarly, example (41) necessarily has an epistemic reading with present reference and the combination of irrealis and prospective was chosen for all epistemic readings in the storyboard "On the lam" by one speaker. Other speakers chose combinations with more specific modal auxiliaries shown in Table 8.3. Regarding (42) from the storyboard "Chore girl", 3 out of 5 speakers used irrealis either alone or with *fo* in that frame. Other speakers chose more specific modal auxiliaries such as *mas*, as for example in (44) which contrasts with (35) referring to another similar frame. Lastly, the elicited example (43) asks for permission to write and could not be rephrased as 'will I write here?' while maintaining the intended deontic meaning. These observations can be taken as evidence that irrealis in Nafsan could not be analyzed as tense, and that it is better analyzed as expressing mood and modality-related meanings.

The marker *mas* combines with irrealis in both the storyboard data and the Nafsan corpus.[9] It is typically used for expressing necessity, both epistemic (45) and deontic (44), but it can also be used to express possibility (46). In fact, Nafsan does not seem to have any grammaticalized means dedicated to the expression of necessity. The only instantiation of specifying modal force in general is the fact that the modals *tae*, *kano*, and *fla* are restricted to expressing possibilities.[10] In contrast, the auxiliary *lakor* 'maybe'[11] is completely underspecified for modal force, as can be seen in the contrast between examples (47) and (48). *Lakor* can also combine with both the general proclitic and irrealis, but the general proclitic is preferred overall. So far we have seen the general proclitic combining with all modal markers, while also being interchangeable with irrealis. As argued in Section 8.3.1, this speaks to its semantic underspecification, which means that it can freely occur in any contexts otherwise associated with irrealis.

(44) [Context: the same as in (35)]
A=kano pa, ***ka=mas*** *pei was ki plet*
1SG=cannot go 1SG.IRR=must first wash:BI PREP plate:BI
'I can't go, I have to wash the dishes first.' (AK1-034-01, 00:00:50.215-00:00:54.061)

[9]Thieberger (2006) notes that *mas* can combine with both the general proclitic and irrealis, but in my data there is only one occurrence of the general proclitic and *mas*, and in the Nafsan corpus I have found only 2 such occurrences, in sentences referenced as 065.045 and 130.195.

[10]In this respect, Nafsan differs from well-known Indo-European languages in which the distinction between necessity and possibility is expressed in the lexicon. It is also more underspecified in comparison to St'át'imcets, because it only has one marker specified for modal flavor (*fla* for epistemic), whereas St'át'imcets expresses modal flavor lexically but leaves the modal force to the context (Matthewson, 2010).

[11]I use the gloss 'maybe' given by Thieberger (2006), although *lakor* has a much more general modal meaning.

(45) [Context: From Rolka & Cable (2014), Tom is trying to find out where his cat Ado is hidden. There are three boxes in which he might be hidden: red, yellow, and blue. Tom looked at the red and yellow box and Ado was not there. Tom says:]
Ado ***ke=mas*** *to naal blu.*
Ado 3SG.IRR=must stay basket blue:BI
'Ado must be in the blue basket.' (AK1-019-01, 00:02:50.251-00:02:57.910)

(46) [Context: From Rolka & Cable (2014), Tom is trying to find out where his cat Ado is hidden. There are three boxes in which he might be hidden: red, yellow, and blue. Tom looks at the red box and says:]
Ado ***ke=mas*** *kus to naal miel to.*
Ado 3SG.IRR=must hide stay basket red stay
'Ado might be hidden in the red basket.' (AK1-019-01, 00:02:06.280-00:02:12.213)

(47) [Context: the same as in (45)]
Ah, ***i=lakor*** *to naal ksakes.*
INTERJ 3SG=maybe stay basket blue
'Ah, he must be in the blue basket.' (AK1-012-01, 00:04:13.748-00:04:17.466)

(48) [Context: the same as in (46)]
Ado ***i=lakor*** *to naal miel.*
Ado 3SG=maybe stay basket red
'Ado might be in the red basket.' (AK1-012-01, 00:01:27.635-00:01:34.183)

The last marker to be discussed in is *fla*, a TMA marker used to denote epistemic possibility. This is the only marker specified for modal flavor, at least in its usage in main clauses (see Section 8.5), and also the only marker that almost exclusively combines with the general proclitic (49). Although the analysis of the general proclitic as being underspecified for TMA is perfectly compatible with that, the puzzle here is why irrealis is not used with *fla* in the data in Table 8.3. In order to explain this, I argue that there are some phonological constraints on the combinations of certain irrealis forms and *fla*. The irrealis forms that are attested with *fla* in the Nafsan corpus and my data are *ka=fla* '1SG=might', *p̃a=fla* '2SG=might', and *ke=fla* '3SG=might'. In the data presented in Figure 8.1 in Section 8.3.1, which comprises both corpora, there are only 5 occurrences of these forms. Example (50) shows a case from the corpus and (51) from the storyboard "The woodchopper" (TFS, 2011d) in which Mary warns John not to go cutting wood at night. Other attested examples are conditional clauses, and these types of constructions will be discussed in Section 8.5.

(49) [Context: the same as in (46)]
I=fla *to naal miel.*
3SG=might stay basket red
'He might be in the red basket.' (AK1-012-01, 00:03:45.616–00:03:55.380)

Table 8.4: Combinations of proclitics with *fla*

	General	Irrealis
1SG	*a=fla*	*ka=fla*
2SG	*ku=fla*	*p̃a=fla*
3SG	*i=fla*	*ke=fla*
1DU.INCL	***ta=fla***	?***tak=fla***
1DU.EXCL	***ra=fla***	?***rak=fla***
2DU	***ra=fla***	?***rak=fla***
3DU	***ra=fla***	?***rak=fla***
1PL.INCL	***tu=fla***	?***tuk=fla***
1PL.EXCL	*u=fla*	*ko=fla*
2PL	*u=fla*	*ko=fla*
3PL	***ru=fla***	?***ruk=fla***

(50) *Go nafsan ki tkal Maarik Naot p̃ur Nmak Kalsaur, elag ntaf nag i=f wel*
and word PREP reach man village big Nmak Kalsaur up hill COMP 3SG=COND thus
ke=fla *watpun m̃aau nran wan.*
1SG.IRR=might warrior giant two TOP
'And the message reached Chief Nmak Kalsaur up on the hill if he would kill these two warriors.' (128.012)

(51) *isaa kin* ***p̃a=fla*** *kraksmanr nkap ke=skei ke=m̃el.*
bad COMP 2SG.IRR=might miss wood 3SG.IRR=one 3SG.IRR=fall
'It would be bad if you dropped a piece of wood.' (AK1-146-03, 00:01:17.559-00:01:22.277)

An important piece of evidence for this discussion comes from my elicitations of possible combinations of different TMA markers and proclitic paradigms. This type of elicitation consisted simply of asking two speakers whether a given TMA marker can combine at all with the general and irrealis proclitics. Table 8.4 shows all the accepted combinations for the marker *fla*. While the whole general proclitic paradigm was judged acceptable to combine with *fla*, the only irrealis proclitics that were accepted without a doubt were the forms ending in a vowel. All the forms which end in *-k* were said to sound strange and that in those persons the general proclitic sounded better (cf. recording AK1-117-01). In fact, if we look at the Nafsan corpora, the sequence of the type *-kfC-*, where C is any consonant, are only attested as *-kfr-* and *-kfs-*. There is only one occurrence of *-kfs-* and 10 occurrences of *-kfr-*, all of them with the verb *freg* 'make.IRR', as shown in (52). There are no occurrences of the sequence *-kfl-* in both Nafsan corpora. In Chapter 8.5 I show a very similar pattern for the conditional marker *f*. In the case of *f*, however, the irrealis forms ending in *-k* were more strongly rejected because of a seemingly stronger phonological constraint on the sequence *-kf#*, where # indicates a pause. Since the forms of the type *tak=fla* are phonologically more acceptable than *takf*, they were only judged as sounding odd. Thus, it seems that for reasons independent of the semantics of *fla* and the proclitics, *fla* simply does not combine with irrealis in a large number of forms in the

paradigm. The fact that combinations with some forms are not available must have an impact on the paradigm as a whole, which makes the general proclitic the preferred choice.

(52) *ale malnen ru=pan na* ***ruk=freg*** *talm̃at*
okay:BI then 3PL=go PURP 3PL.IRR=make.IRR garden
'Then they went to work in the garden.' (035.009)

8.5 Conditional clauses

In this section I analyze the usage of general and irrealis proclitics in conditional clauses. In Section 8.5.1 I outline different conditional constructions used in Nafsan and I offer a reanalysis of some of the functions and properties of *f* and *fla* in comparison to Thieberger (2006). In Section 8.5.2 I focus on the combinations of TMA marking and proclitics in the protasis and apodosis of different types of conditionals, on the basis of results from storyboard elicitations.

8.5.1 Conditional constructions

As previously mentioned in Section 2.3.1 and 8.2, Thieberger (2006) shows that conditional clauses are introduced by the markers *f* (53)[12] and *fla*, which he glosses as a conditional and a 'may' particle, respectively. In Thieberger's (1995–2018) Nafsan corpus *fla* is also glossed as conditional when appearing in conditional clauses, as for instance in (54). Conditionals can also be introduced by the construction *i=f-wel (kin)* glossed as 3SG=COND-like (COMP) as in (55), which can also be literally translated as 'it might be like (that)'.

(53) *[A=****f*** *mer pa] me a=****fla*** *lakor wel Jimmy Stevens, ko a=****f*** *lakor mat*
1SG=COND in.turn go but 1SG=may maybe like Jimmy Stevens or 1SG=COND maybe die
Solomon.
Solomon
'If I had gone, I could have been like Jimmy Stevens, or I could have died in the Solomons.' (Jimmy Stevens who went to the Solomons and came back alive.) (041.014)

(54) *[ko ku=****fla*** *slat na naik] [ko ku=****fla*** *slat tete nmatun tefla=n ne] me*
or 2SG=COND take DET fish or 2SG=COND take some thing similar=DST this and
ko*=slat-i-ø mai*
2PL.IRR=take-TS-3SG.OBJ come
'[…] or if you take fish, or if you take something like that, you take it and come.' (093.013, 093.014)

(55) *[****I=f-wel*** ***kin*** *taos nametrau lap ru=****fla*** *to weswes te-naor welkia ru=lap],*
3SG=COND-like REL like family many 3PL=may stay work some-place thus 3PL=many
*ru=****f*** *tae tilusus-i-k.*
3PL=COND can gossip-TS-2SG.OBJ
'If, like, lots of the family might work someplace, well there are lots of them, then (others) could gossip about you.' (Thieberger, 2006:161)

[12] Conditional protases are indicated by square brackets.

As shown in examples (53)-(55), the markers *f* and *fla* can introduce conditional clauses, and in these cases they could be analyzed as subordinate conditional markers. However, neither *f* nor *fla* are necessarily interpreted as conditionals. They can both appear in the protasis and the apodosis, as shown by the contrast between (53) and (55). The apodoses 'I could have died in the Solomons' (53) and 'then (others) could gossip about you' (54) cannot be interpreted as starting a new subordinate conditional clause. They simply express a possible event that would take place, if the condition in the protasis was satisfied. Thus, the meaning of *f* and *fla* in these cases is the expression of possibility. This is consistent with the fact that *fla* is an epistemic modal marker in main clauses, see Section 8.4. In Krajinović (2018) I argue for a reanalysis of examples like (53) and (54) as paratactic conditionals. This means that we are dealing with two juxtaposed main clauses and that the conditional interpretation of sentences introduced by *f* and *fla* is pragmatically derived as an inference that the first clause is a condition and the second one is the outcome that follows it. The juxtaposed clauses are typically temporally interpreted in the linear order of their appearance (Haiman, 1985). Thus, the first clause marked by *f* in (53) is interpreted as an earlier possibility and the second clause marked by *fla* is interpreted as a later possibility. This is followed by the interpretation that the two clauses are in a relationship of cause and effect, which leads to a conditional reading (see Dancygier, 1998). This type of juxtaposed clauses with a conditional reading are called *paratactic conditionals* (Haiman, 1983). There is another piece of evidence that supports that this process takes place in Nafsan, namely that we find other juxtaposed clauses that can also have conditional meanings. Examples (56) and (57) do not have any conditional marking and they still yield a conditional interpretation, which means they are also paratactic conditionals.

(56) *[natam̃ol* ***p̃a****=tu-a-ø mal] go ga i=piatlak educated wi*
person 2SG.IRR=give-TS-3SG.OBJ time and 3SG 3SG=have educated good
'If you give people time they can have a good education.' (119.025)

(57) *[****Ku****=lak-a-ø npat-i-n i=miel], go ga kin i=paam-i-ø nawi gaag.*
2SG=look-TS-3SG.OBJ teeth-V-3SG.DP 3SG=red and 3SG REL 3SG=eat-TR-3SG.OBJ yam 2SG.POSS
'If you see her teeth are red, then she is the one who ate your red yam.' From the storyboard "Red Yam" (von Prince, 2018e) (AK1-027-01, 00:12:34.908-00:12:38.680)

In contrast to *f* and *fla*, the construction *i=f-wel (kin)* from (55) seems to behave as a typical subordinate construction. The argument for its subordinative character is presented in Krajinović (2018) in the following way. In paratactic conditionals, the iconicity, i.e. linear order, of the two clauses plays a role in what is considered to be the condition/cause and what is the consequence/effect (Haiman, 1986). Thus, we expect that the inversion of these two clauses would also invert the interpretation of what is considered to be the condition/cause and consequence/effect. In subordinate clauses this should not be so, because there is a subordinator indicating which clause is the subordinate conditional clause. We can see that in an example like (53) the inversion of one of the two consequences with the condition would result in a different conditional reading. This is because both types of clauses have the same marking and they are not formally distinguished in any other way. If we look at the *i=f-wel* clauses, we can see that the inversion of the clauses is possible while maintaining the

same conditional interpretation. In examples (58) and (59), the protasis initiated with *i=f-wel (kin)* follows the main clause (apodosis) and results in an unambiguous interpretation where the second clause marked with *i=f-wel (kin)* is a condition, and the first clause is a consequence. Another indication of the subordinate character of *i=f-wel kin* is the fact that it often contains the complementizer *kin* that has a subordinative function. Other possible forms of *i=f-wel kin* are *f-wel (kin)* and *i=wel (kin)*.[13]

(58) *He a=mur-i-n na p̃a=mai ni Kaltog preg nalkis* ***[i=f-wel***
hey 1SG=want-TS-3SG.OBJ COMP 2SG.IRR=come BEN Kaltog make medicine 3SG=COND-like
ku=f *tae preg-i-ø].*
2SG=COND know make-TS-3SG.OBJ
'Hey, I would like you to come and make some medicine for Kaltog, if you can do it.' (103.012)

(59) *Ke=fo pakot naftuan,* ***[i=f-wel kin*** *naturiai ke=wes naul*
3SG.IRR=PSP.IRR buy present 3SG=COND-like COMP young.man 3SG.IRR=get money
nanom].
yesterday
'If the boy had gotten the money (yesterday), he would have bought a present for the girl.'
Based on Dahl (1985:TMAQ 105, 106) (AK1-083-01)

According to Thieberger's (2006) earlier analysis, *f* and *fla* can only be used with the general subject proclitics. While this is the case for many occurrences of *f* and *fla*, see Figure 8.1 in Section 8.3.1, there are also cases of irrealis proclitics attaching to *f* and *fla*. Despite occurring more rarely than with general proclitics, we find examples like (60) in the Nafsan corpus and (61) in the storyboard data, with *f* and *fla* with irrealis subject proclitics.

(60) *ka=fo tae, ka=fo preg nafsan sees [i=f-wel kin*
1SG.IRR=PSP.IRR know 1SG.IRR=PSP.IRR make story small 3SG=COND-like COMP
ka=f *mur-i-n].*
1SG.IRR=COND want-TS-3SG.OBJ
'I know, I will tell a small story if I want.' (127.087)

(61) *P̃a=pe mroususi,* ***[ka=fla*** *makir nal-u-k ke=miel], ka=fo*
2SG.IRR=there imagine 1SG.IRR=might dye hair-V-1DP 3SG.IRR=red 1SG.IRR=PSP.IRR
lakor mai pi natam̃ol ke=skei nen ru=to sausou ki kineu em̃rom band.
maybe come be man 3SG.IRR=one REL 3PL=stay praise PREP 1SG inside band:BI
'Just imagine, if I painted my hair red, I would be praised in the band.' (AK1-146-03, 00:03:44.183-00:03:56.886)

In my investigations in the field (cf. recording AK1-117-01), I elicited the paradigm for the marker *f* as shown in Table 8.5. Depending on the subject person, the marker *f* can be attached to both realis and irrealis subject proclitics. However, it combines with irrealis only in those persons where the

[13]Because of the possibility to use *f-wel (kin)* I treat *f* as a prefix to *wel* and not as a separate word (see examples in Section 8.5.2).

Table 8.5: Combinations of *f* with proclitics

	General	Irrealis
1sg	*a=f*	*ka=f*
2sg	*ku=f*	*p̃a=f*
3sg	*i=f*	*ke=f*
1du (incl)	***ta=f***	**tak=f*
1du (excl)	***ra=f***	**rak=f*
2du	***ra=f***	**rak=f*
3du	***ra=f***	**rak=f*
1pl (incl)	***tu=f***	**tuk=f*
1pl (excl)	*u=f*	*ko=f*
2pl	*u=f*	*ko=f*
3pl	***ru=f***	**ruk=f*

irrealis element *-k* does not occur, in all of dual, 1PL (INCL), and 3PL. The incompatibility of *f* with those persons must be based on the phonological constraint on the sequence *-kf#*, because there are no attested occurrences of *-kf#* in the corpora, or any other sequences of the type *-Cf#* for that matter. This behavior is similar to the phonological restrictions attested with *fla* discussed in Section 8.3.2.

8.5.2 Storyboard results

In order to test the frequency of general and irrealis proclitics in conditional protases and apodoses, I elicited several storyboards targeting different types of conditionals. Table 8.6 shows all the storyboards I used together with the number of targeted conditionals and their types.

Before presenting the analysis of the collected data of conditional clauses, I describe the conditional types from Table 8.6 and show how they were tested with storyboards. The temporal and modal distinctions, as described by the branching-times model described in Section 7.1.3, are defined by different combinations of temporal and modal references. The temporal distinctions are past, present, and future, and the main modal distinction is between counterfactual and possibility (hypothetical)[14] conditionals. Counterfactual conditionals report on possibilities that are either contrary to the fact (past and present counterfactuals) or expected not to happen in the future (future counterfactuals).[15] Future-possibility conditionals denote possibilities for which there does not seem to be particular belief that they will not occur in the future. In other words, given that the condition is satisfied under the current circumstances, they are expected to happen. Figure 8.6 shows these dif-

[14]These conditionals are also referred to as "hypothetical" in the literature (e.g. Thompson et al., 2007; Kroeger, 2019:353), but here I use the terms "present and future possibility conditionals" that relate with more precision to the temporal and modal meanings.

[15]The future counterfactuals have also been referred to as *future less vivid* by Iatridou (2000).

Table 8.6: Storyboards eliciting conditional clauses

Title	N° targeted cond.	Conditional types	N° speakers
Festival (FV) (von Prince, 2018c)	3	past and future counterfactual	8
The fortune teller (FT) (TFS, 2010)	6	future possibility, past counterfactual	5
The fortune teller 2 (FT2) (AK1-166-15)	3	future possibility, past counterfactual	2
Making laplap (ML) (Krajinović, 2018c)	1	past counterfactual	6
Making laplap 2 (ML2) (Krajinović, 2018c)	1	future counterfactual	4
The woodchopper (W) (TFS, 2011d)	2	negative past counterfactual	5
Garden (G) (Krajinović, 2018a), Garden 2 (G2) (AK1-166-07)	2	present counterfactual	6
Red yam (RY) (von Prince, 2018e)	1	present possibility	7

ferent temporal modal areas in the branching-times model.[16] The only temporal modal combinations not indicated in Figure 8.6, are the possible past and present, which include some level of epistemic uncertainty, such as *if he was there yesterday, he has already seen it.* In the model from Figure 8.6 they would refer to the area including both the counterfactual indices and the index belonging to the actual world, either past or present. The inclusion of the actual index captures the fact that the speaker does not know whether the said possibility has in fact been realized or not. In this work, past and present-possibility conditionals were not systematically tested, except for a few obtained examples from the storyboard "Red Yam" (see below).

Counterfactual conditionals were elicited through storyboards by setting a context in the story in which it is clearly indicated that the antecedent is contrary to the fact or unlikely as can be seen in examples (62) and (63) from the storyboard "Festival" (von Prince, 2018c) in which two friends are talking about the ongoing competitions taking place in their town. The text in bold in (62) expresses a past counterfactual, and in (63) a future counterfactual. Example (64) illustrates the present counterfactual conditional from the storyboard "Garden" (Krajinović, 2018a).

(62) *A: Did you play soccer yesterday?*
B: No, it rained. **If I had played soccer yesterday, I would have gotten wet**.

(63) *A: Are you going to play volleyball tomorrow?*
B: No, I hurt my finger. **If I played volleyball tomorrow, my finger would bleed again**.

(64) *Mary is in the garden looking for her husband. She calls him on the phone and he lies to her that*

[16]The connections between the nodes of the actual past and counterfactual present and future nodes capture the idea that had something in the past played out differently (blue), then the present would be different (green), and the future would be different from what is expected to happen (orange).

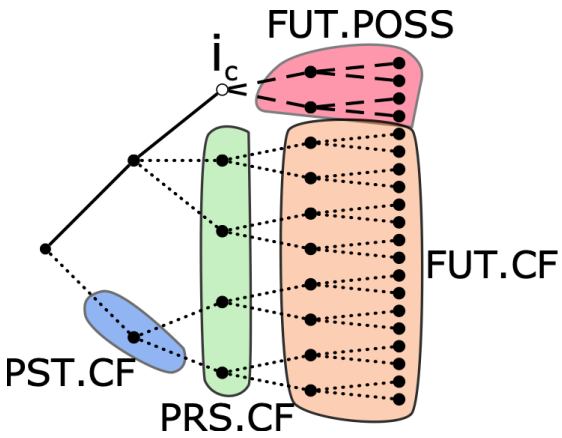

Figure 8.6: Semantic areas of past counterfactual PST.CF, present counterfactual PRS.CF, future counterfactual FUT.CF, and possible future meaning FUT.POSS, based on von Prince et al. (2019d)

he is also in the garden.
Mary: **If you were in the garden right now, I would be looking at you right now**.

The conditionals expressing a future possibility differ from the counterfactual conditionals in that their outcome is not yet determined. For instance, in the storyboard *The Fortune Teller* (TFS, 2010) a fortune teller gives predictions about the future, considering different conditions, such as 'marrying John', as shown in (65). Here we can see that the future possibility of having children is a possible outcome of marriage, and it is not considered unlikely to ever happen as it was the case in (62) and (63).

(65) *A: John has asked me to marry him. What will happen if I marry him?*
The fortune teller looks into the future and says: **If you marry John, you will have many children**.

The results regarding the TMA marking and conditional constructions of the conditional protasis are presented in Table 8.7. The main conclusions that can be taken from these results are the following: a) there is a dedicated counterfactual marker *mer* used optionally, previously analyzed as *mer* 'again' by Thieberger (2006), b) the general and irrealis proclitics can both occur in past and future counterfactuals and future-possibility conditionals, although irrealis is preferred in all of them, and c) conditional protasis with strict present reference referring to the utterance time can only have general proclitics. I provide evidence for each of these points below.

The counterfactual and future-possibility conditionals can be formally distinguished in Nafsan. The counterfactual conditionals can optionally be marked by the marker *mer*, which is not permitted with the meaning of future possibility. Although both types of conditionals can also be expressed by the *i=f-wel* structure, the counterfactuality can be specified with *mer*. Thieberger (2006) analyzes *mer* as an auxiliary verb meaning 'again/in turn'. Although *mer* does have the meaning of 'again/in turn' in other contexts, in conditionals it is grammaticalized as a counterfactual marker. The typical

Table 8.7: Storyboard results for conditional protases, storyboards from Table 8.6, gen – general proclitic, irr – irrealis proclitic

Conditional type	Protasis TMA	N° occurr.	Gen/irr ratio
Past counterfactual (frames FV 11, FT 19, 21, 22, W 17, 20, ML 15, FT2 21, 22)	**gen** + *(f)* + *mer*	5	general 31%, irrealis 69%
	(i)f-wel (kin) + **gen**	7	
	irr + *(f)* + *mer*	15	
	(i)f-wel (kin) + **irr**	12	
Present counterfactual (G 10, G2)	**gen** + *(f)* + *mer*	5	general 100%
	(i)f-wel (kin) + **gen**	7	
Future counterfactual (frames FV 15, 18, ML2 3)	**gen** + *(f)* + *mer*	3	general 22%, irrealis 78%
	(i)f-wel (kin) + **gen**	2	
	irr + *(f)* + *mer*	8	
	(i)f-wel (kin) + **irr**	9	
	isaa kin 'it is bad that' + **irr**	1	
Present possibility (RY 14)	*(i)f-wel (kin)* + **gen**	2	general 100%
Future possibility (frames FT 12, FT2 12)	*(i)f wel (kin)* + **gen**	2	general 25%, irrealis 75%
	(i)f-wel (kin) + **irr**	6	

counterfactual construction is formed by either a general (66) or irrealis proclitic (67) attached to *f* and then followed by *mer*. However, there are also cases of either realis or irrealis proclitic attaching directly to *mer* (68), which suggests that the reading of counterfactuality is due to the presence of *mer*. Some of the corpus examples, such as (53) can now be reanalyzed as involving the counterfactual *mer*.

(66) [Context from (64)]
*[**ku=f** **mer** to talm̃at to] ka=fo lek ag.*
2SG=COND CF stay garden stay 1SG.IRR=PSP.IRR see 2SG
'If you were in the garden, I would see you.' (AK1-154-01, 00:04:45.106-00:04:52.520)

(67) [Context from (62)]
*[**ka=f** **mer** pei p̃i bol nanom], ka=fo lom usrek.*
1SG.IRR=COND CF first kick ball:BI yesterday 1SG.IRR=PSP.IRR wet completely
'If I had played soccer yesterday I would have gotten wet.' (AK1-004-01, 00:01:57.691-00:02:13.145)

(68) [Context from (62)]
*[Nanom **p̃a=mer** mes futbol], p̃a=fo lom uus.*
yesterday 2SG.IRR=CF play soccer 2SG.IRR=PSP.IRR wet rain
'If you had played soccer yesterday, you would have gotten wet.' (AK1-048-01, 00:03:16.213-00:03:22.490)

In comparison to SBJ.PRO=*(f)* + *mer* + verb as a dedicated counterfactual construction, *i=f-wel kin* is a more general construction that can be used for all types of conditionals, as can be seen in Table 8.7. Examples (69) and (70) with *i=f-wel (kin)* mirror the counterfactual examples (66) and (67) with *(f) mer*, respectively. This shows that *i=f-wel (kin)* is a default conditional expression and that *mer* is indeed an optional marker of counterfactuality. If we look back at example (53) in Section 8.5.1, we see that the presence of *mer* was due to counterfactuality.

(69) *[**i=f-wel** **kin** ku=to talm̃at malfanen], ka=fo lek ag.*
3SG=COND-like COMP 2SG=stay garden now 1SG.IRR=PSP.IRR see 2SG
'If you were in the garden right now, I would see you.' (AK1-151-01, 00:03:29.643-00:03:33.778)

(70) *[**i=f-wel** **kin** ka=fan mes], go ka=fo lom.*
3SG=COND-like COMP 1SG.IRR=go.IRR play and 1SG.IRR=PSP.IRR wet
'If I had gone to play, I would have gotten wet.' (AK1-098-01, 00:02:54.008-00:03:00.871)

More evidence for the dedicated meaning of *mer* constructions is that they are not considered felicitous in future-possibility and present-possibility conditionals, as shown in examples (71) and (72). All speakers chose *i=(f) wel (kin)* for these types of conditionals, and in the follow-up elicitation they also confirmed that a construction with *mer* would not be appropriate (cf. recording AK1-075-01). Table 8.8 summarizes available conditional structures in the storyboard data[17] (apodosis is

[17]For possible diachronic reasons and register, other conditionals constructions, such as those starting with *fla* and *f*

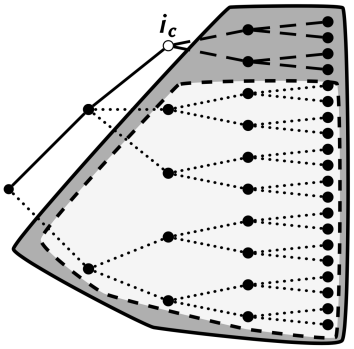

Figure 8.7: The irrealis domain in Nafsan, solid outline: irrealis subject proclitics; dashed outline: optional *mer*, from von Prince et al. (2019d)

further discussed below) and Figure 8.7 represents the meaning of *mer* and irrealis in the branching-times model of modality.

(71) [Context from (65)]
*[**I=f-wel** **kin** **ku**=taulu John], akam rak=fo pitlak teesa*
1SG=COND-like COMP 2SG=marry John 2DU 2DU.IRR=PSP.IRR have children
ruk=fo laap.
2PL.IRR=PSP.IRR many
'If you marry John, you will have a lot of children.' (AK1-010-01, 00:02:11.561-00:02:17.625)

(72) [Context from (65)]
*[**F-wel** **kin** **p̃a**=lak skot John], rak=fo pitlak teesa laap.*
COND-like COMP 2SG.IRR=marry with John 2DU.IRR=PSP.IRR have children many
'If you marry John, you two will have a lot of children.' (AK1-018-01, 00:17:43.236-00:17:47.525)

Table 8.8: Structure of conditional clauses in the storyboard data

Type	Protasis	Apodosis
default	*(i=)(f) wel (kin)* + SBJ.PRO=verb	SBJ.PRO=(*fo*) + verb
counterfactual	SBJ.PRO=*(f)* + *mer* + verb	SBJ.PRO=(*fo*) + verb

Regarding our semantic analysis of subject proclitics, the most important finding is that the general proclitics are completely interchangeable with irrealis proclitics in the protases of future-possibility conditionals and past and future counterfactual conditionals. Examples (71) and (72) above show the same conditional clauses with the interpretation of future possibility with the general

alone (Thieberger, 2006) did not appear in the storyboard data, see Krajinović (2018) and Krajinović & Thieberger (2018). However, they were accepted in elicitation, see also example (61) from a non-targeted storyboard context.

proclitic and the irrealis proclitic in the protasis, respectively. Similarly, (73) and (74) show the same conditional clauses with the interpretation of a future counterfactual with the general proclitic and the irrealis proclitic in the protasis, respectively. In conclusion, examples (71)-(74) show that general proclitics can have any modal and temporal reference established in the context and by TMA markers, such as the conditional *f*. Crucially, the fact that general proclitics can have future reference is a good indicator that they should not be treated as realis mood or non-future tense.

(73) [Context from (63)]
*[**a=f** mer mes matol], go nfag nen kin a=tai nakn-i-k ke=fo*
1SG=COND CF play tomorrow and sore REL COMP 1SG=cut finger-V-1SG.DP 3SG.IRR=PSP.IRR
mer makot
again break
'If I played tomorrow, the sore I cut on my finger would bleed again.' (AK1-098-01, 00:03:39.185-00:03:57.063)

(74) [Context from (63)]
*[**ka=f** mer mes volibol matol], nakn-i-k ke=fo mra*
1SG.IRR=COND CF play volleyball:BI tomorrow finger-V-1SG.DP 3SG.IRR=PSP.IRR bleed
'If I played volleyball tomorrow, my finger would bleed.' (AK1-004-01, 00:03:27.921-00:03:33.286)

As we can see in Table 8.7, the only types of conditionals that combined exclusively with the general proclitic are the conditionals with present reference, including the counterfactual (66) and present-possibility conditionals (75).[18] The fact that irrealis does not occur with the elicited present conditionals must be related to the fact that both elicited contexts refer exactly to the utterance time. When the present reference is considered to be more generic, irrealis readily appears in counterfactual contexts, as in (76).

(75) [Two friends are discussing whether their friend Yokon has eaten their red yam. (von Prince, 2018e)]
*[**F-wel** **kin** npat-i-n **i**=miel], go Yokon mãs kin **i**=paam nawi miel gaag.*
COND-like COMP teeth-V-3SG.DP 1SG=red then Yokon only COMP 1SG=eat yam red 2SG.POSS
'If her teeth are red, then Yokon is the one who ate your red yam.' (AK1-060-01, 00:03:48.433-00:04:01.225)

(76) *[**ka=f** **mer** pram] ke=fo wi*
1SG.IRR=COND CF tall 3SG.IRR=PSP.IRR good
'it would be good if I was taller.' (elicited, AK1-046-01)

[18] In the targeted present-possibility conditional from "Red yam" only two speakers, counted in Table 8.7, produced a stative verb with a necessarily present reference and 5 speakers produced dynamic verbs which are better interpreted as having a future reference. These interpretations are due to the relationship between stative verbs and present modal orientation, while dynamic verbs relate to the future modal orientation (Condoravdi, 2002).

Regarding the TMA marking of the apodosis, all conditional types in Table 8.7 have the combination of the irrealis proclitic and prospective irrealis *fo*, except for the present-possibility conditional from the "Red yam" storyboard (75). Since in this example the reference of the apodosis is situated in the past, the general proclitic is chosen instead of irrealis. This shows that the function of *fo* in apodoses is indeed to denote that the protasis is temporally in the pre-time of the apodosis. The function of irrealis proclitics in the apodosis is the same as in the protasis – denoting meanings of possibility and counterfactuality.

8.6 Complement and relative clauses

8.6.1 False beliefs and relative clauses

The study of mood in complement and relative clauses has been mostly tied to the study of the subjunctive in Indo-European languages, which differs widely across different languages. For that reason, it is hard to postulate "expected" behaviors of a category of mood in complement clauses. In this section I outline a few subjunctive-like characteristics that were considered in this work and focus on the expression of false beliefs and non-specific relative clauses in Nafsan. The work on subjunctive in complement clauses has mostly centered around accounting for different complement-taking verbs and the mood they select (e.g. Giannakidou, 2017), as shown by the contrast of examples (77) and (78) from French. While the verb *savoir* 'know' selects a complement clause with indicative describing a fact pertaining to the actual world (77), the verb *vouloir* selects a subjunctive clause expressing a possibility pertaining to non-actual worlds (78). The same type of contrast exists in Nafsan with the general and irrealis proclitics, as we can see in (79) and (80), respectively.

(77) *Marc* ***sait*** ***que*** *le printemps* ***est***/ **soit arrivé.*
Marc knows that the spring be:IND:3SG/ be-SBJV.3SG arrived
'Marc knows that spring has arrived.' (Giannakidou, 2017:177)

(78) *Marc* ***veut*** ***que*** *le printemps* ***soit***/ **est long*
Marc wants that the spring be:SBJV:3SG/ be:IND:3SG long
'Marc wants spring to be long.' (Giannakidou, 2017:177)

(79) *natokon e teetwei a=****tae-ki*** *teetwei* ***i=****piatlak tete ntwam*
village hey before 1SG=know-TR before 3SG=have some devil
'Long ago in the village, I know that long ago there were some devils.' (073.051)

(80) *natam̃ol nra ne ra=****mur*** *na* ***rak=****taulu Mary*
man two DEM 3DU=want COMP 3DU=marry Mary
'The two men wanted to marry Mary.' (AK1-146-09, 00:00:15.790-00:00:18.133)

Apart from these relatively simple contrasts between knowledge and desire predicates, there are many types of complement-taking verbs whose selection criteria of indicative and subjunctive in Indo-European languages are far from trivial (cf. Schlenker, 2005; Marques, 2009; Giannakidou, 2017). Let us take an example of expressing false beliefs, which refer to non-actual worlds, in Portuguese – both the subjunctive and indicative can be chosen without any difference in the meaning, as indicated

by Marques (2009:199), who says "In fact, (81),[19] either with the indicative or the subjunctive, may be felicitously asserted in a context where the speaker accepts that Ana is ill, as well as in a context where he accepts that she isn't."

(81) ***pensei*** ***que*** *a Ana* ***estava/*** ***estivesse*** *doente*
think:1SG.PST that the Ana be:3SG.PST.IND be:3SG.PST.SBJV sick
'I thought Ana was sick.' (Marques, 2009:199)

Departing from these characteristics of subjunctive and indicative mood in Indo-European languages, as well as commonly cited meanings of irrealis as referring to different types of complement and relative clauses (e.g. Roberts, 1990; Bugenhagen, 1993; Barbour, 2011), I investigated the usage of irrealis and general proclitics in these contexts in Nafsan. The data elicitation of complement clauses in Nafsan included both storyboards and meta-linguistic elicitations about the complement-clause structures found in storyboards. The expression of false beliefs was tested in Nafsan with the storyboard "Bundle of bananas" (von Prince, 2018a) in which two friends realize that the bananas they were trying to get from the river are just a reflection of a banana tree. All speakers used the general proclitic to express a false belief in this context, as shown in (82). Thus, false beliefs do not trigger the use of irrealis proclitics in Nafsan. In fact, all complement clauses introduced by complement-taking verbs expressing propositional attitude behave the same as main clauses, regarding the expression of TMA meanings. Thus, the irrealis proclitic typically receives future and modal reference and the general proclitic past and present reference. A deontic reading of a complement clause marked by irrealis, equal to deontic readings of irrealis in main clauses, is exemplified in (83). The same pattern holds for complement-taking predicates analyzed by Noonan (2007) as utterance predicates (saying, asking), immediate perception (seeing, hearing), and knowledge (know, discover) predicates. The negation of the complement-taking predicate also does not influence the selection of the general and irrealis proclitics, as shown in (84). We can conclude that in Nafsan the types of predicates mentioned above do not influence the selection of the general and irrealis proclitics, as their distribution can be explained by the same principles postulated for the appearance of general and irrealis proclitics in main clauses, as explained in Section 8.7.

(82) *Go ra=to* ***mro-ki-n*** *na nlak nanr* ***i=****to etan nai.*
and 1DU.EXCL=PROG think-TS-3SG.OBJ COMP tree banana 3SG.REAL=stay down water
'And we thought that the banana tree was in the water.' (AK1-017-01, 00:11:51.930-00:11:55.920)

(83) *Ku=****mro-ki-n*** *na* ***ka=****lak skot John ko i=tik?*
2SG=think-TS-3SG.OBJ COMP 2SG.IRR=marry with John or 3SG=not
'Do you think I should marry John or not?' (AK1-018-01, 00:17:12.011-00:17:15.691)

[19]Example number in this work and not from the original quotation.

(84) *Mary i=**tap** **mro-ki-n** na Adam **i**=pi marik wi toklos*
Mary 3SG=NEG1 think-TS-3SG.OBJ COMP Adam 3SG=be husband good regarding
*teleekot **mau**.*
fortune.teller NEG2
'Mary doesn't think Adam was a good husband to the fortune teller.' (elicited, AK1-133-01)

Another context often considered to be a property of the indicative/subjunctive and realis/irrealis distinctions is the usage of subjunctive and irrealis in relative clauses headed by non-specific NPs, because they have no referent in the actual world (see Barbour 2011 for Neverver). Judging from the corpus data presented in (85) and (86), Nafsan seems like a good candidate to encode the specificity distinction by the choice of irrealis and general proclitics. Example (85) uses irrealis on the numeral determiner 'one' to refer to a non-specific unknown place and (86) uses the general proclitic because the place is specific and known to the speaker.

(85) *nlaken ru=ple go ru=mer mai pak **naor ke**=skei go ru=po*
because 3PL=fight and 3PL=again come go.to place 3PL.IRR=one and 3PL=PSP.REAL
sos-o-ø ki unity dei
call-V-3SG.OBJ PREP unity:BI day:BI
'[...] because they fought and they came to a place and they called it a unity day.' (130.267)

(86) *u=pak elag, naor ni [...] **naor i**=skei ru=sos-o-ø ki Tanmililip.*
1PL.EXCL=go.to up place of place 3SG=one 3PL=call-V-3SG.OBJ PREP Tanmililip
'we went up to the place of [...] this place they call Tanmililip.' (022.033)

The hypothesis that relative clauses would behave similarly to (85) and (86) was tested with the storyboard "Fat pig" (von Prince, 2018b) in which Bong wants to make a traditional *kastom* ceremony in Vanuatu, but he needs a fat pig with big tusks. In example (87) he only starts looking for a pig of that type, which is non-specific. For the purpose of comparison with a subjunctive-type language, example (88) offers a sentence produced in the same context in Portuguese.[20] In the continuation of the story, Bong loses the fat pig he received from his uncle, and is then searching for that specific pig. This context is expressed in (89) for Nafsan and in (90) for Portuguese. Both examples from Nafsan reflect the proclitic marking in the relative clause chosen by all participants. As we can see, Nafsan does not distinguish between the non-specific and specific referents by the selection of mood in the relative clause itself. However, in the non-specific context, as in (87), Nafsan can optionally use the irrealis proclitic on the determiner *skei* 'one' referring to the head of the relative clause. On the other hand, Portuguese marks this difference by using the subjunctive in the complement clause in the non-specific context (88) and by using the indicative in the specific context (90).

[20]The Portuguese examples were elicited from one native speaker.

(87) *Ale, i=to lel waak* ***ke****=skei [nen kin naɸ̃l-e-n* ***i****=saal* ***i****=pak*
then:BI 3SG=PROG look pig 3SG.IRR=one REL COMP belly-V-3SG.DP 3SG=hang 3SG=go.to
etan go npat-i-n ***i****=top go i=top].*
down and teeth-V-3SG.DP 3SG=big and 3SG=big
'Then he was looking for a pig [non-specific] whose belly hangs down and whose teeth are very big.' (AK1-049-01, 00:01:54.323-00:02:10.118)

(88) *Estou à procura de um porco [que* ***tenha*** *uma barriga gorda e cujas*
be:1SG.PRS PREP search of a pig REL have:3SG.PRS.SBJV a belly fat and whose
presas ***sejam*** *muito longas].*
teeth be:3PL.PRS.SBJV very long
'I'm looking for a pig [non-specific] that has a big belly and whose teeth are very long.'

(89) *A=to lel waak [nen kin naɸ̃l-e-n* ***i****=saal go npat-i-n* ***i****=taf*
1SG=PROG look pig REL COMP belly-V-3SG.DP 3SG=hang and teeth-V-3SG.DP 3SG=get.out
i=top pe top].
3SG=big INT 3SG=big
'I am looking for a pig [specific] whose belly hangs and whose teeth are very big.' (AK1-022-01, 00:04:03.198-00:04:10.645)

(90) *Estou à procura de um porco [que* ***tem*** *uma barriga gorda e cujas*
be:1SG.PRS PREP search of a pig REL have:3SG.PRS.IND a belly fat and whose
presas ***são*** *muito longas].*
teeth be:3PL.PRS.IND very long
'I'm looking for a pig [specific] that has a big belly and whose teeth are very long.'

Given that Nafsan does use irrealis proclitics on determiners in non-specific contexts such as (85) and (87), the best explanation for the lack of irrealis in relative clauses in the context of example (87) is that the relative clause is outside of the scope of the non-specific reference and receives its own TMA marking independently of the head of the clause. Similarly to the complement-taking predicates such as 'think', relative clauses also reflect the choice of irrealis and general proclitics equal to the main clauses.

8.6.2 Desiderative, emotive and evaluative clauses

In this section I address several topics regarding the selection of general and irrealis proclitics in desiderative, emotive and evaluative complement clauses in Nafsan. In Nafsan, these types of complement clauses proved to have a complex interaction between the complement-taking verb, complementizers and TMA reference of the complement clause. I show that the general proclitic can appear in many counterfactual and future-oriented contexts, and that different temporal readings of complement clauses can be indicated by dedicated complementizers, as well as aspectual markers. I show that these temporal readings of complement clauses can in turn influence the meaning of the complement-taking verb, similarly to what has been reported for Navajo (Bogal-Allbritten, 2016) and Daakaka (von Prince, 2015).

The most important storyboard contexts for obtaining evaluative complement clauses were frames

Figure 8.8: Frames 21 and 22 from "Bill vs. the weather" (Vander Klok, 2013)

18, 20, and 22 in the storyboard "Bill vs. the weather" (Vander Klok, 2013). These contexts were targeting past epistemic readings, also analyzed in Section 8.4. However, as Vander Klok (2019) shows, the targeted contexts are in fact ambiguous between a past epistemic and a past counterfactual reading. These contexts unfold as follows. Forgetful Bill is always unprepared for the weather conditions on his way to work. The only day he does take all the necessary clothes for rain, snow, and cold, the sun comes out. The next day his friend wonders why he brought all those winter clothes on a sunny day, see Figure 8.8. In this context both the general and the irrealis proclitics were produced in an evaluative complement clause, as can be seen in (91) and (92). Out of the total of 24 sentences produced by 8 speakers for this frame, 13 sentences are complement clauses introduced by *i=sa kin* 'it is bad that'. This construction seems to be a dedicated way of expressing undesirable possibilities, which can also be analyzed as timitive constructions (von Prince et al., 2019b,c).

(91) [Context: Why did you bring a hat yesterday?]
Nlaken ***i=sa*** ***kin*** *nlag* ***i=****fuu.*
because 3SG=bad COMP wind 3SG=blow
'It would be bad if wind had blown.' (AK1-039-01, 00:05:33.556-00:05:35.681)

(92) [Context: the same as (91)]
I=sa ***kin*** *nlag* ***ke=****sisi.*
3SG=bad COMP wind 3SG.IRR=blow
'It would be bad if wind had blown.' (AK1-018-01, 00:13:13.680-00:13:19.216)

The ratio of the usage of general and irrealis proclitics in examples like (91) and (92) is almost 50:50, with 7 sentences with irrealis proclitics and 6 with general proclitics (out of which one combines with *fla*). Thus, we can conclude that there is no clear preference for irrealis or general proclitics in these contexts. Since these evaluative clauses express the evaluation of a counterfactual possibility, the general proclitics have again proved to be underspecified for realis meanings. The question that arises here, however, is how the evaluative clauses with factual meanings like 'it is bad that the wind blew' can be distinguished from the counterfactual complement clauses like (91) and (92). The answer I found through meta-linguistic elicitation lies in the choice of complementizers. Thieberger (2006) identifies three complementizers (*kin*, *nen (kin), na(g)*), but during my fieldwork I found a new complementizer *kia*, which is necessary for factual interpretations with evaluative and emotive predicates. Thieberger (2006:146) analyzes *kia* as a presentative typically translated as 'here' or 'this one', but in comparison to my data it is not clear to which extent the demonstrative function plays a

role in its usage as a complementizer synchronically. In (93) the usage of *kia* determines the reading of the complement clause as factual, pertaining to the actual world (because it is a shared knowledge that there is in fact a volcano on the island of Tanna). In the counterfactual context presented in (91) and (92), *kia* would be agrammatical.

(93) *I=sa* ***kia*** *(*kin)* ***i=****pitlak* *volkano* *Tanna.*
3SG=bad COMP.REAL *COMP 3SG=have volcano:BI Tanna
'It is bad that there is a volcano on Tanna.' (Elicited, AK1-046-01)

The complementizer *kia* specifies that the described event has either the past (94) or present reference, as in (93) and (95). I tentatively gloss it as COMP.REAL because it is used only in realis contexts. In the present reference it is interchangeable with the complementizer *kin*,[21] as shown in (95). However, unlike *kia*, *kin* can also appear with future reference, as in (96). The complementizer *kin* is in general less specified than *kia*, because it can occur with almost all temporal references, except for more remote past and generic references, where *kia* is used, as seen by the contrast between (97) and (98). In other words, *kin* seems to be used more commonly with immediate past (97), present progressive (95), and future (96). This relationship between *kin* and *kia* explains why (91) could only be interpreted as encoding a counterfactual possibility and not a factual complement clause. Since the context of the example sets the event on the previous day in the past, *kia* would have been a better choice if factuality was intended. Thus, despite the underspecification of the general proclitic when it comes to the modal interpretation of the complement clause, *kin* specifies the modal reference as that of possibility.

(94) [Context: A asks B: Have you eaten? B says: yes, and A replies:]
*ah, i=****wi*** ***kia*** ***ku=****pe* *faam.*
ah 3SG=good COMP.REAL 2SG=PRF eat.IRR
'Ah, it's good you have eaten.' (elicited, AK1-023-01)

(95) *i=****wi*** ***kin/kia*** ***ku=****to* *faam.*
3SG=good COMP/COMP.REAL 2SG=PROG eat.IRR
'It is good he is eating (right now).' (elicited, AK1-023-01)

(96) [Context: A asks B: Have you eaten? B says: not yet, and A replies:]
*ah, i=****wi*** ***kin*** ***p̃a****=faam.*
ah 3SG=good COMP 2SG.IRR=eat.IRR
'Ah, it would be good if you ate.' (elicited, AK1-023-01)

[21] A caveat to my analysis of *kin* is that this form exists in Nafsan as a complementizer (Thieberger, 2006:297), but also as object marking on some verbs like *mro-****ki-n*** 'think-TS-3SG.OBJ'. In my work I did not find sufficient evidence that *kin* has the function of -TS-3SG.OBJ in the examples discussed in this section. Since *kia* does not seem to be related to the object-marking function, given that speakers reject the form *mro-ki-a*, I concluded that *kin* and *kia* are most likely complementizers and not object markers. However, if the transitivity analysis was proven to be the correct one, the TMA effects described here would hold in any case.

(97) [Context: in the moment of leaving the house]
*a=**semsem kin** **a**=mai tok esum̃ gamus.*
1SG=happy COMP 1SG=come stay house 2PL.POSS
'I am happy that I stayed at your place.' (elicited, AK1-078-01)

(98) [Context: meeting the host after a while of having stayed at their place:]
*a=trau **semsem kia** **a**=mai tok esum̃ gamus.*
1SG=really happy COMP.REAL 1SG=come stay house 2PL.POSS
'I am glad to have stayed at your place.' (elicited, AK1-078-01)

Another way by which temporal reference can be indicated is aspect. For instance, example (95) has a present progressive reading because of the imperfective marker *to*. This influence of *to* on the temporal interpretation is independent of its combination with proclitics, because it yields a present interpretation both with the general proclitic and with the irrealis proclitic, as we can see in (99) and (100) with the desiderative/emotive verb *mur*. Since *to* can mark both progressive and habitual readings, these aspectual readings in (99) and (100) get interpreted as present reference by pragmatic defaults of imperfective aspect discussed in Section 7.2.2. In contrast, when the verb is not marked by *to*, it gets interpreted as perfective, and the complement clause receives a future reading due to irrealis marking, as in (101) and (102). As stipulated by Smith et al. (2007) and Mucha (2015) for Navajo and Hausa, respectively, unbounded events are interpreted as located in the present by default, due to two factors. Firstly, in the lack of a more specific context, the topic/reference time of the sentence is the present because utterance time is the central orientation point for language (cf. The Deictic Principle) and it requires least information added or inferred (cf. The Simplicity Principle) (Smith et al., 2007). Secondly, unbounded/imperfective events contain the topic/reference time in their duration, which is the utterance time in the case of a default interpretation (Mucha, 2015).

(99) *A=trau **mur-i-n** **kin** **a**=to tae nafsan.*
1SG=really like-TS-3SG.OBJ COMP 1SG=PROG know language
'I really like that I am learning Nafsan.' (elicited, AK1-045-01)

(100) *a=**mur** (na) **ka**=to sari.*
1SG=like (COMP) 1SG.IRR=HAB travel
'I like to travel.' (elicited, AK1-078-01)

(101) *a=**mur** (na) **ka**=fan sari.*
1SG=want COMP 1SG.IRR=go.IRR travel
'I want to go travel.' (elicited, AK1-078-01)

(102) *I=pitlak natam̃ol i=nru nen ra=**mur** **rak**=lak skot-i-ø.*
3SG=have man 3SG=two DEM 3DU=want 3DU.IRR=marry with-TS-3SG.OBJ
'There are two men who want to marry her.' From "The fortune teller" (TFS, 2010) (AK1-092-01, 00:00:09.626-00:00:13.148)

So far we have seen that the TMA reference of complement clauses is partially determined by complementizers, by proclitics (at least in the case of irrealis), and aspect of the complement clause.

The case of Nafsan is interesting in that the complement-taking verbs do not seem to impose a specific TMA marking or reference, as it is often reported for Romance languages (e.g. Schlenker, 2005; Marques, 2009; Giannakidou, 2017). In fact, this process also goes the other way round. As we can see by comparing examples (99)-(101), the present reference established by the imperfective *to* gives rise to the interpretation of *mur* as 'like' in (99) and (100), while the future reference established by irrealis in (101) gives rise to the meaning of *mur* 'want'. This means that the complement clause can contribute to the interpretation of the complement-taking verb. Since these 'like' and 'want' meanings were elicited in English, I further tested them through the storyboard "Haircuts" (Krajinović, 2018b), as shown in (103) and (104). The results confirmed that *mur* is used for both of these meanings, but there is also the more specified verb *lewiki* 'like' (104) which cannot express wishes.

(103) [Context: Introducing the character Mary who likes to travel.]
*nmatu ne i=pi nmatu nen i=**mur** **ke**=to siwer*
woman DEM 3SG=be woman REL 3SG=like 3SG.IRR=HAB walk
'This woman is someone who likes to travel.' (AK1-154-03, 00:00:32.236-00:00:38.581)

(104) [Context: Kal's hair has grown since the last time Mary saw him. Mary says:]
*a=**mur** go, a=**le-wi-ki** nal-u-m teflan kin i=pe pei to*
1SG=like that 1SG=see-good-TR hair-V-2DP like.that COMP 3SG=PRF first stay
'I like it, I like your hair the way it is now.' (AK1-152-03, 00:03:54.265-00:04:01.230)

When it comes to desiderative meanings, 'want' verbs have been shown cross-linguistically to be quite polysemous (Khanina, 2008). As a an example of a more extreme lexical ambiguity of a complement-taking verb, Navajo can receive the meanings of 'think' and 'want' depending on the aspect of the complement clause (Bogal-Allbritten, 2016:152). This is shown in example (105), where the same verb *nízin* is interpreted as 'think' with the perfective clause and also as 'want' with the future clause. This example illustrates well that desiderative meanings are related to futurity and possibility of the expressed wish coming to happen, while predicates of belief are neutral with regard to TMA reference.

(105) *Alice [Bill Kinłánígóó **'íiná]** dóó [bich'į **deesháát**] **nízin**.*
Alice Bill Flagstaff.to 3SG.move.PFV and 3OBJ.to 1SG.go.FUT 3SG.nízin.IPFV
'Alice thinks Bill moved to Flagstaff and she wants to go see him.' (Bogal-Allbritten, 2016:152)

In fact, even the verb *mro* 'think' in Nafsan can be interpreted as denoting intentions instead of beliefs, as it was the case in (82) in Section 8.6.1. When the complement clause is marked with the irrealis proclitic alone (without *fo*), *mro* can express an intent or a wish, as shown in (106).

(106) *Bong i=to **mro** na **ke**=freg kastom.*
Bong 3SG=PROG think COMP 3SG.IRR=make.IRR kastom:BI
Bong intends to make/wants to make a kastom ceremony. (AK1-028-01, 00:00:10.196-00:00:14.068)

There are a few main conclusions that can be made for this section: a) general proclitics can express possibilities in complement clauses, b) the temporal and modal reference of the complement clause

is restricted by the choice of complementizers, c) aspect marking contributes to default temporal interpretations of the complement clause, d) irrealis expresses counterfactual and future possibilities, as well as habituals in complement clauses, and e) these temporal and modal interpretations can influence the meaning of the complement-taking verb.

8.7 Pragmatic account of realis and irrealis

In this section I provide a pragmatic explanation for two main questions stemming from this chapter: a) why do general proclitics typically have the non-future meaning in the main clauses, and complement and relative clauses that follow this pattern (see Section 8.6.1), and b) why are general and irrealis proclitics interchangeable in some modal contexts where irrealis would be predicted semantically. I assess how different approaches presented in Section 7.2 can answer these two questions. I propose that the Maximize Presupposition principle can offer an explanation for the typically non-future meaning of general proclitics in main clauses. However, I explain the interchangeability of the general and irrealis proclitics by postulating an additional pragmatic principle based on economy of expression, which can come in conflict with Maximize Presupposition.

In Section 7.2 I described several approaches that have been adopted in the literature to explain how the TMA meaning is derived when a language lacks tense marking (Section 7.2.2) or when one of the available grammatical categories is semantically underspecified (Section 7.2.3). Let us first consider how the pragmatic theory of default temporal reference by Smith et al. (2007) and Mucha (2015) would apply to Nafsan. We could postulate that when the general subject proclitics are the only marking on the verb in Nafsan, the default temporal reference is that of the present when the verb is unbounded. We have seen in Section 8.6.2 that the imperfective *to* contributes to the present interpretation. This is also the case in many other examples, such as (107). However, if the TMA reference of sentences like (107) in Nafsan was driven only by defaults, we would expect that in the right context *i=to* could also be interpreted with a future reference. Smith (2008) and Mucha (2015) show that in a future context the unmarked sentences can easily get a future interpretation. However, in Nafsan the future interpretation is not as easily derived with general proclitics when there is no additional modal or perfect marking on the verb. If we compare examples (108a) and (108b), we can see that irrealis proclitics are used with the future reference 'in the evening' (108a), and the general proclitic can also combine with *fla* to express epistemic uncertainty about the event with the same future reference (108b). However, the general proclitic cannot be used alone with the future temporal reference (108b). The same holds for the example (109) in which the general proclitic has to combine with *fla* in order to render the conditional future meaning. So, when does the general proclitic get future and modal meanings at all? Since the general proclitic combines with almost all available TMA markers and auxiliary verbs, it simply gets its TMA reference from those specific markers. In (108b) and (109), this is the marker *fla* and in other cases it might be the conditional *f* (Section 8.5), the perfect *pe* (see example (12) in Section 8.3.1), the complementizer *kia* (Section 8.6.2), and many other types of constructions. In some cases, the context might even be sufficiently specific so that the general proclitic can get interpreted as future without any additional TMA marking (see examples

(4) and (5) in Section 8.2). However, in out-of-the-blue default cases, the general proclitic simply has past and present interpretations, while the set of contexts in which a future/modal interpretation is possible is limited. For this reason, the pragmatic explanation based on defaults would not work for Nafsan. This approach would be too permissive and it could not explain the temporal restrictiveness we find with general proclitics, when occurring without additional TMA marking.

(107) [Q: What your brother DO right now? (=What activity is he engaged in?) A by someone who can see him] He WRITE letters (Dahl, 1985:TMAQ 5)

I=to *mtir natus*
3SG=PROG write paper
'He is writing letters (right now).' (Thieberger, 2006)

(108) [There are black clouds in the sky.] It RAIN in the evening. (Dahl, 2000b:FQ 46)

a. *Us* ***ke=fo*** ***lakor*** *wo* ***kotfan****.*
rain 3SG.IRR=PSP.IRR maybe rain evening
'Maybe it will rain in the evening.' (AK1-086-01)

b. *Us* ***i=fla*** *wo* ***kotfan****./ us* ****i=wo*** ***kotfan****.*
rain 3SG=might rain evening rain 3SG=rain evening
'It might rain in the evening.' (AK1-086-01)

(109) If it BE COLD tomorrow, we STAY at home. (Dahl, 2000b:FQ 67)

Naor ***i=fla*** *tok mlanr* ***matol****, ka=fo tok esum̃.*
place 3SG=might stay cold tomorrow 1SG.IRR=PSP.IRR stay house
'If it's cold tomorrow, I will stay at home.' (AK1-103-01)

I turn now to a pragmatic explanation of how the non-future meaning of general proclitics in main clauses is derived. As shown in Section 8.1, the irrealis and perfect-agreeing proclitics are portmanteau subject markers because they cannot be consistently separated in the formative parts of TMA and subject marking in their synchronic form. Thus, although from the diachronic perspective the general proclitics are morphologically simpler than the other two in not having any recognizable TMA morphology, synchronically all three paradigms can be considered as occupying the same morphological slot. In this sense, for every utterance the speakers needs to choose one of these three subject proclitics, which makes them alternatives of each other.[22] Nevertheless, not all three of them are in equal competition with each other. For instance, the irrealis and perfect-agreeing proclitics cannot appear in the same morphological contexts – the prefect proclitics occur only with the perfect marker *pe* and irrealis proclitics cannot combine with that marker at all (even in future contexts). This simply means that irrealis and perfect-agreeing proclitics do not compete and are not alternatives of each other. The situation is different with the general proclitics. They can occur in most contexts where irrealis and perfect-agreeing proclitics can occur too. Thus, general proclitics are always a viable alternative to these two paradigms. In the case of the perfect-agreeing proclitics, which are basically limited to occurring with *pe* (see Section 5.1.1), the only kind of relationship

[22]See Bochnak (2016) for the argument that in order for two categories to be alternatives that qualify for Maximize Presupposition, they have to be members of same grammatical paradigm.

between the general and perfect-agreeing proclitics is that of their interchangeability in occurring with the perfect marker *pe*. In other words, they do not compete pragmatically in any other domain other than co-occurring with *pe* (for possible exceptions see Section 5.1.1). However, when it comes to the relationship between the general and irrealis proclitics, there are two types of contexts in which they pragmatically compete. The first type of context is the same as in the case of the perfect-agreeing proclitics: there are clear modal/future contexts with markers such as *f* COND and both the general and the irrealis proclitics are available in those contexts. The second type of context is that of main clauses, especially in out-of-the-blue contexts, in which the general and irrealis proclitics occur alone, or in the case of irrealis, with the only marker (*fo*) incompatible with the general proclitic. Since the general proclitic is not semantically specified for TMA meanings, we would expect that it should be able to freely occur without any additional marking in future contexts like (108). I argue that the reason why it cannot occur in that type of context is because it stands in a pragmatic competition with the irrealis proclitics, which have a more specific future meaning as a part of their semantics. The basic derivation of this process can be explained by the Maximize Presupposition principle (see also Section 7.2.3). This process goes as described in (110).

(110) The underspecified general subject proclitics and irrealis proclitics form an implicational scale ⟨SBJ.PRO.IRR, SBJ.PRO⟩ where the irrealis proclitic SBJ.PRO.IRR presupposes the reference to non-actual worlds and the general proclitic SBJ.PRO has no presupposition. By the principle of Maximize Presupposition ("Make your contribution presuppose as much as possible!", Heim 1991), the use of the weaker subject marking as the only marking on the verb leads to the pragmatic inference that the reference to non-actual is false, which leads to "realis" interpretations.

In other words, (110) says that since irrealis proclitics are more semantically specified they should be used whenever their presupposition is satisfied in the common ground. Thus, when the irrealis proclitics are not used, we implicate that their presupposition does not hold, and in this case that means that the reference to non-actual worlds does not hold. Finally, this frequently leads to the interpretation that the reference to the actual world holds. This is how the general proclitics get their realis meanings in main clauses as (111), in contrast to (108).

(111) *Us* ***i***=*wo* *(nanom p̃og).*
rain 3SG=rain yesterday night
'It rained yesterday night.' Based on Dahl (2000c:PQ 14) (AK1-119-01)

The basic idea behind the implicated presuppositions derived through Maximize Presupposition (Sauerland, 2008) and other related scalar implicatures rely on the Gricean maxim of quantity (Grice, 1975), outlined in (112).

(112) a. Make your contribution as informative as is required (for the current purposes of the exchange).
b. Do not make your contribution more informative than is required.

Applying the maxim of quantity to the Nafsan proclitics, according to (112a), the speaker needs to be as semantically specific as required in a given context. In other words, if the speaker knows that the event has a future, possible, or counterfactual reference, the speaker should use irrealis, as predicted by Maximize Presupposition. And while this pragmatic principle explains the distribution of general and irrealis proclitics in main clauses, it does not really predict that the general and irrealis proclitics should be interchangeable in certain irrealis contexts, such as future-possibility and counterfactual conditionals and complement clauses. I argue that in these cases the second part of the maxim of quantity (112b) plays a role. As already mentioned in the beginning of this section, the general proclitics occur in irrealis contexts only when the context is either specific enough or there is morphological marking of conditionals (*f*) and counterfactuality (*mer*) as in (113), or a complementizer favoring a possibility reading, as *kin* in (114). There might also be a general preference for the general proclitics as they are formally simpler and shorter (cf. Haspelmath, 2014).

(113) *Selwan* ***i=f*** ***mer*** *pitlak kompetisen ni kapu, a=mro-ki-n ag kin*
while 3SG=COND CF have competition:BI of laplap 1SG=think-TR-3SG.OBJ 2SG REL
p̃a=fo pi wina knen.
2SG.IRR=PSP.IRR be winner:BI of.it
'If there was a laplap competition, I think you would be its winner.' (AK1-004-01, 00:04:02.080-00:04:18.430)

(114) [Context: Why did you bring a hat yesterday?]
i=sa ***kin*** *nlag* ***i=****sisi.*
3SG=bad COMP wind 3SG=blow
'It would be bad if wind had blown.' (AK1-062-01, 00:05:54.448-00:05:58.486)

The sentences in (113) and (114) are already informative enough regardless of the subject marking chosen, due to their discourse context and due to the additional morphological marking of TMA with *f* and *kin*. Thus, the irrealis proclitics are not really needed in order to transmit an unambiguous message. Nevertheless, they are still the preferred choice for most of these types of examples (see Section 8.5). The preference for irrealis which coexists with the availability of general proclitics in the same contexts can be explained as the result of the conflict between being specific enough (112a) by obeying Maximize Presupposition and not saying more than it is required in a given context (112b). This observation leads us to postulate another principle which captures (112b) in a manner applied to the specific case of realis/irrealis in Nafsan, which I call Economy principle in (115). The Economy principle can explain why speakers still use the general proclitics in contexts in which the irrealis proclitics would in fact be semantically more specific, but also redundant. If the context is already specific enough as shown in (113) and (114), the economy principle suggests the speaker should choose the least specific grammatical marker needed.

(115) **Economy principle**:
If the context is specific enough, use the least specific grammatical marker needed.

Some independent evidence for the existence of this principle can be found in similar types of

contrasts in other languages. For instance, the contrast between the German present and the future tense can be analyzed as obeying the Economy principle. While the present tense in its default reading refers to the present temporal reference, it can also be used for the future temporal reference. The future tense, on the other hand, has a more specific meaning, as it is constrained to the future temporal reference. Interestingly, the use of the present tense is in fact preferred over the future tense when an explicit adverb of future reference is present in the sentence, such as in (116).[23] However, when no explicit temporal reference is given in the context, as in (117), both options seem to be equally preferred. I propose that the preference of the present tense in (116) is a consequence of the Economy principle – when the future temporal reference is specifically indicated by a temporal adverb in German, the present tense, as the less specific TMA marking is preferred over the semantically more specific future tense.[24]

(116) *Peter* ***fährt*** ***nächstes Jahr*** *nach Neuseeland.*
Peter travel:3SG.PRS next year to New.Zealand
'Peter will travel to New Zealand next year.'

(117) *Peter* ***fährt*** *nach Neuseeland./ Peter* ***wird*** *nach Neuseeland* ***fahren.***
Peter travel:3SG.PRS to New.Zealand Peter AUX:3SG.FUT to New.Zealand travel:INF
'Peter will travel to New Zealand.'

An additional piece of evidence that principles based on economy hold in language comes from psycholinguistics. The research in psycholinguistics, focused on lexical words, shows that words that appear in more contexts, and especially in semantically more dissimilar contexts are recognized and produced faster in different kinds of behavioral experiments, such as lexical decision, naming, or reading (Adelman et al., 2006; Johns et al., 2012; Perea et al., 2013; Vergara-Martínez et al., 2017). Although these results were obtained in experimental settings and only with lexical words, it is possible that similar effects can be found in grammar. This would mean that more frequent and semantically dissimilar grammatical words, i.e. less semantically specified, would be more easily processed than less frequent and semantically more specific words. Furthermore, Jones et al. (2012) argue that "repetition of a word produces greater processing savings if the repetition is accompanied by a change in semantic context" and that this ultimately leads to an easier accessibility of that word from the mental lexicon. In our case, this would mean that the general proclitics as semantically more dissimilar words than irrealis proclitics when it comes to TMA are more easily processed than the irrealis and perfect-agreeing proclitics. One caveat is that the mentioned studies only report on processing times and not the production of speech. Thus, the future research would need to show the relation between the processing and production in this domain for this argument to apply to the Nafsan case.

[23] Although this preference might vary depending on the register and on the temporal adverbial in question, at least in the colloquial German I have confirmed this judgment by a corpus search of Wikipedia discussions 2017 (wrd17.i5.xml.bz2) from `http://corpora.ids-mannheim.de/pub/wikipedia-deutsch/2017/`. In a simple search of the co-occurrences of the two tenses with the temporal adverb *morgen*, the present tense occurred with *morgen* 84% out of the total occurrences of *morgen* (49 out of 58), and future tense only 16%.

[24] I wish to thank to Manfred Krifka for suggesting this type of argumentation and providing the German examples.

Possible diachronic explanations could also contribute to the understanding of the synchronic system. As mentioned in Section 8.1, a hypothesis based on the Nafsan data could be that the general proclitics were the only subject marking available, which necessarily co-occurred with other TMA markers. Eventually some of the TMA markers merged with the subject marking and formed the irrealis and perfect(-agreeing) proclitics. However, since the new proclitics now occupy the same morphological slot as the general subject proclitics, they started co-occurring with other TMA markers, such as *ƒ* and *pe*. This means that although the irrealis and perfect-agreeing proclitics started being used in new contexts in which they are semantically appropriate, the process of stabilization of their occurrence with specific TMA markers might still be happening. For example, the perfect-agreeing proclitics seem to have stabilized to only occur with *pe*, even though the data from Thieberger's (1995–2018) corpus and Bible translations suggest a much wider usage of these proclitics in the past. The irrealis proclitics also occur with *ƒ* in my data more than recorded in Thieberger's (1995–2018) corpus (see also Section 8.5.1).

While different diachronic principles led to the complex system we find today in Nafsan, the pragmatic competition between the general and irrealis proclitics can be synchronically accounted for by: a) adhering to the Maximize Presupposition principle in main clauses without additional TMA marking, and b) assuming the existence of a conflict between the Maximize Presupposition and the Economy principle, as two opposite forces of Grice's maxim of quantity.

Chapter 9

Realis and irrealis in Oceanic languages

In this chapter I provide evidence that the reanalysis of realis done for Nafsan in Chapter 8 can be successfully applied to other Oceanic languages with similar issues. I also address the debated status of irrealis as a meaningful linguistic category and show that the meanings of the irrealis category in different Oceanic languages are all consistent with the semantic definition of irrealis as referring to non-actual worlds.

9.1 Oceanic languages with underspecified categories: Wogeo

In this section I show that the underspecification of subject markers can explain certain problems with the categories analyzed as realis and irrealis in Oceanic languages. I focus on the Oceanic language Wogeo and argue that realis subject markers in Wogeo are semantically unmarked, just like in Nafsan.

Wogeo is a Western Oceanic language spoken on the island of Wogeo in the north of Papua New Guinea. The data used in this section were published in an article by Exter (2012) about the distribution of realis and irrealis in Wogeo. The verbal complex of Wogeo is outlined in (1). As we can see, the subject markers are situated in between different TMA markers and they are obligatorily expressed in every sentence. These subject markers are also portmanteau markers, because a systematic compositional analysis is not possible when the realis and irrealis paradigms are compared. These two paradigms were already mentioned in in Section 2.2 as an example of high level of syncretism between their paradigms. The forms are presented again in Table 9.1 for convenience. Exter (2012:180) notes that there are further morphophonological and morphological complexities regarding these paradigms, which are not considered for the purposes of his paper on realis and irrealis.

(1) CF + TMA + **SBJ.PRO** + INCH + CAUS + IPFV + **V** + IPFV [...] (Exter, 2012:180)

Exter (2012) reports on the differences between realis and irrealis subject markers: irrealis is chosen in non-actual environments, such as future and different kinds of possibilities, as shown in examples (2)-(4), and realis is chosen for the past and present reference, as in (5) and (6).

Table 9.1: Subject markers in Wogeo (Exter, 2012:181), in their forms as they would appear with the verb *lako* 'go'

	Realis	Irrealis
1SG	*o-*	***g**o-*
2SG	*go-, ko-*	*go-*
3SG	*e-*	***d**e-*
1DU	*to-*	*to**g**-*
2DU	*kad-*	
3DU	*do-*	*do**g**-*
1PC	*to-*	*to**g**-*
2PC	*koto-*	
3PC	*doto-*	
1PL	*ta-*	
2PL	*ka-*	
3PL	*da-*	

(2) ***go**-lako*
1SG.IRR-go
'I must go', 'I want to go', 'I will go (now)' (Exter, 2012:182)

(3) *iko* ***go**-la-boalé* *va* *na* *o-taval=te*
you 2SG.IRR-INCH-tell.3SG 1SG FOC 1SG.REAL-die=TOP
'You must tell him that I did die.' (Exter, 2012:185)

(4) *do-boré* ***dog**-va* *gon-iak,* *vaine* *boe* *ramata* *du-rú* *ma*
3DU.REAL-want 3DU.IRR-RECP play-APPL.PL woman and man they-DU FOC
'They wanted to sleep with each other, that woman and man.' (Exter, 2012:185)

(5) ***o**-lako*
1SG.REAL-go
'I go', 'I went' (Exter, 2012:182)

(6) *va, ilo-g* ***e**-la-muta∼muta-k-iko*
1SG inside-1SG 3SG.REAL-INCH-be.tired.of∼IPFV-APPL-2SG
'Me, I became tired of you.' (Exter, 2012:185)

The issue with the realis/irrealis definition of Wogeo subject markers is that realis and irrealis are completely interchangeable in occurring with the future, as in (7) and (8), and tentative markers (9), without a change in the meaning. Moreover, realis appears obligatorily in protases of counterfactual conditionals (10) because irrealis is not morphologically available with the counterfactual marker *s-* (Exter, 2012:186). We can see, however, that realis subject markers are also used in the apodosis of the conditional in (10). Exter (2012:184) mentions several other modal contexts in which realis markers occur, such as ability, permission, and protases and apodoses of hypothetical conditionals. The only

meanings restricted to irrealis are obligation, volition, and immediate future (Exter, 2012:185).

(7) a. *m-**o**-lako*
FUT-1SG.REAL-go

b. *mo-**go**-lako*
FUT-1SG.IRR-go
'I will/can/may go.' (Exter, 2012:182)

(8) a. *vavá iko va m-**u**-*[1]*kila-k-an-iko udemtaregá*
name.3SG you I FUT-1SG.REAL-call-APPL.3SG-BEN-2SG Udemtaregá
'Its name, which I will call it for you, is Udemtadegá.'

b. *va kat va mo-**go**-jale-k oageva*
I canoe I FUT-1SG.IRR-go.down-APPL.3SG Vokeo
'I will bring my canoe down to Vokeo.' (Exter, 2012:186)

(9) a. *s-**o**-lako*
TENT-1SG.REAL-go

b. *so-**go**-lako*
TENT-1SG.IRR-go
'I try it by going.' (Exter, 2012:182)

(10) *s-**e**-vá iko sa-**k**-lako, katé mo-**la**-moet*
CF-3SG.REAL-happen you CF-2SG.REAL-go thus FUT.2SG.REAL-INCH-disappear
'If you had gone, you would have been lost.' (Exter, 2012:186)

Evidence provided by Exter (2012) that "realis" can appear with numerous future and modal meanings mentioned above, including counterfactuals, suggests that the "realis" paradigm could be reanalyzed as a subject marking of person and number, semantically underspecified for TMA values. Similarly to Nafsan, this reanalysis can explain why in some contexts the two paradigms of subject markers are interchangeable or why only the general marking is available due to morphological constraints (cf. the case of *ƒ* and *fla* in Nafsan, Sections 8.4 and 8.5.1). I propose that in the case of Wogeo a pragmatic analysis similar to the one made for Nafsan could explain the puzzles identified by Exter (2012). Thus, the realis meaning in (5) could be a result of the pragmatic competition between the semantically specified irrealis subject marking, which presupposes the reference to non-actual worlds, and the underspecified general subject marking, without any such presupposition. Similarly to Nafsan, through Maximize Presupposition, the usage of the general subject marking would then implicate that the reference to non-actual worlds is not intended, because the irrealis is not used. While the exact mechanisms of how the pragmatic competition between the "realis" and irrealis subject markers in Wogeo might be proven to differ from the one I proposed in Nafsan in Section 8.7, this case study showed us how another language can benefit from adopting the reanalysis of one of the subject-marking paradigms as not being semantically specified for TMA meanings. The types of reanalyses proposed in this section, as well as other case studies mentioned throughout

[1]This form of the vowel instead of *o-* shown in Table 9.1 is due to morphophonological and morphological complexity in Wogeo, which includes processes such as vowel assimilation, idiosyncratic fusions, vowel changes, and vowel deletions (Exter, 2012:180).

this thesis (cf. Section 7.2.1) provide good evidence that subject markers analyzed as portmanteau are often not portmanteau markers at all. This conclusion confirms some of the doubts raised by Cristofaro (2012), who warns against postulating the expression of the realis/irrealis distinction by subject markers. Nevertheless, we have seen that, due to their complex diachrony, subject markers can in fact have TMA values, but even then it is not uncommon that one of the paradigms of subject markers is semantically underspecified, which can in some cases be accompanied by morphological underspecification.

9.2 The evidence for the validity of irrealis

In this section, I address one of the main points of criticism against the cross-linguistic validity of irrealis, namely the cross-linguistic variability of irrealis which is considered to inhibit a valid cross-linguistic definition of irrealis. As de Haan (2012) and Bugenhagen (1993) noticed, the categories labeled as irrealis in two different languages sometimes do not even overlap in their distribution (see Section 7.1.2). Bybee (1998) also argues that languages typically have more specific TMA markers rather than the binary distinction between realis and irrealis. In Section 9.2.1 I use the case of Nafsan and Maŭea to show that the fact that languages have specific TMA markers does not invalidate the existence of more general realis and irrealis categories, because in both Nafsan and Maŭea more specific TMA markers regularly combine with irrealis subject proclitics. In Section 9.2.2 I analyze North Ambrym (Vanuatu) which expresses irrealis meanings by more than one marker and show that, although each of the markers does not cover the full semantic domain of irrealis, they all still belong to the irrealis domain (in the sense of the model presented in Section 7.1.3). The data from Oceanic languages studied in this section come from parallel storyboard elicitations done in the MelaTAMP project and published in von Prince et al. (2019d). All examples also contain references to their respective corpora. The examples used in this section come from the storyboards "Festival" (von Prince, 2018c) and "The fortune teller" (TFS, 2010).

9.2.1 Combinations of the irrealis and TMA markers: Maŭea

As we have seen in Chapter 8, the irrealis proclitics in Nafsan co-occur with several more specific modal and aspectual markers, such as prospective *fo*, conditional *f*, and counterfactual *mer*. These TMA markers have modal and aspectual meanings which are restricted to a smaller number of contexts in comparison to the irrealis proclitics. A similar situation is attested in Maŭea (North Vanuatu), where irrealis subject prefixes (see Section 2.2) combine with other modal markers, such as the conditional *mo* and future *me* in (11).

(11) *m̆atan* ***ka****-v* ***ka-mo****-ple* *tuan varango-ku* *vutpol* ***i-mo****-voreia* ***me***
because 1SG.IRR-say 1SG.IRR-COND-kick with finger-1SG.POSS football 3SG.IRR-COND-hit FUT
ro ***i****-dae*
then 3SG.IRR-blood
'because if I play with my finger, if the ball hits it, it will bleed.' (VG20171008.051/52, von Prince et al. 2019d:198)

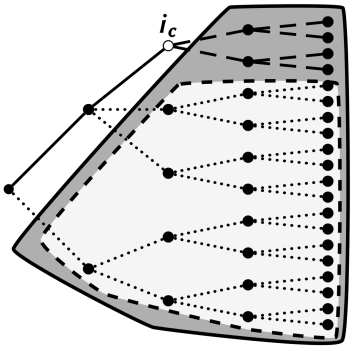

Figure 9.1: The irrealis domain in Nafsan and Maŭea, solid outline: irrealis subject proclitics; dashed outline: optional counterfactual *mer* and *imte*, from von Prince et al. (2019d:198)

Similarly to Nafsan, Maŭea has an optional counterfactual marker *imte*, which was attested in the counterfactual conditionals in the same storyboards as those in Nafsan (see Section 8.5.2). Examples (12) and (13) exemplify the counterfactual context of Mary asking about what her past might have looked like in the storyboard "The fortune teller". In (12) *imte* is used together with the irrealis prefixes, and in (13) irrealis prefixes occur with the conditional marker, without *imte*. This shows that its usage is optional, similarly to the Nafsan *mer*.

(12) ***imte ka**-v* ***ka**-ŭa* *ŭalu-na* *ro* *me* *[...]* *m̃auri rarua i-isaŭai*
if.CF 1SG.IRR-say 1SG.IRR-go to-3SG.POSS then FUT life 3DU 3SG.IRR-how
'Suppose I had stayed with him [...] how would our life have been?" (VG20171047.056-058, von Prince et al. 2019d:197)

(13) ***ka-mo**-lo-to* *tuan me* *m̃auri-ku* *i-pal* *sa*
1SG.IRR-COND-IPFV-stay with FUT life-1SG.POSS 3SG.IRR-like what
'if I had stayed with Peri how would my life have been?' (VG20171060.031-032, von Prince et al. 2019d:198)

Based on the data of the distribution of the irrealis prefixes and the counterfactual *imte* in Maŭea, in von Prince et al. (2019d), we propose that the branching-times model of these meanings is the same as the model of irrealis proclitics and *mer* in Nafsan, as shown in Figure 9.1. As we can see, the irrealis meaning comprises both future-oriented possibilities and counterfactuals, while the reference of the counterfactual markers is limited to counterfactual indices. In both languages, the counterfactual markers are optional and the subject markers are obligatory. Since the irrealis category is expressed by the obligatory subject markers, this means that it constitutes a core category of the TMA systems of Nafsan and Maŭea.

As a response to the criticism that languages typically employ more than one TMA marker for irrealis meanings, we can say that the case of Nafsan and Maŭea has indeed shown that there is typically more than one marker for numerous modal meanings in a given language. However, all these modal markers still combine with the semantically more general irrealis category. Thus, the fact that specific markers exist in a language does not invalidate the existence of a general irrealis

marker. In fact, in languages in which irrealis is expressed with subject markers, the TMA marking is typically compositional, and the combinations of irrealis and other TMA markers can be increasingly complex, as attested in the Nafsan data. Nevertheless, the dynamics of encoding more general and more specific modal meanings can take different shapes. In Nafsan and Maʋ̌ea, irrealis is the obligatory general modal marking which can optionally get specified for counterfactuality. In other languages, the distinction between some specific modal meanings might be expressed by obligatory TMA markers. A language of that type is discussed in Section 9.2.2.

9.2.2 TMA markers in the irrealis domain: North Ambrym

As mentioned in the beginning of this section, the criticism against a cross-linguistically valid definition of irrealis is mainly concerned with the fact that categories labeled as irrealis differ too widely across languages. In this section I use the data from North Ambrym (Ambrym, Vanuatu) collected through the MelaTAMP storyboards (von Prince et al., 2019d) and compare it to Nafsan and Maʋ̌ea. The discussion presented here is inspired by the ideas that feature in my joint paper with Kilu von Prince and Manfred Krifka (von Prince et al., submitted). I show that the "irrealis" label is often used in such a way that two markers in two different languages can have different distributions. However, these markers still belong to the same irrealis domain and through targeted semantic elicitation we can identify and compare their meanings.

North Ambrym has several TMA markers that are integrated in the paradigm of subject markers and these are the recent past *mwe*, the non-recent past *te*, and the irrealis *bV* (where V stand for a vowel), named after their 3SG forms. These paradigms are shown in Table 9.2. Other modal markers relevant for this discussion are the potential *e* and the counterfactual *to*, which are morphologically independent and do not merge into paradigms of subject markers, as in the case of *mwe*, *te*, and *bV* (Franjieh, 2012). Franjieh (2012:124) describes irrealis as occurring in future contexts, complement clauses, habituals, conditionals, and imperatives. In contrast, the potential expresses potential events, disbelief, and deontic modality (Franjieh, 2012:127). Through the storyboard elicitations completed for the MelaTAMP project, it was shown that the irrealis marking was used for all future conditionals, including the future possibility (14) and counterfactuals (15). The irrealis marker can also combine with the potential marker, as we can see in the apodosis in (14) and both protasis and apodosis in (15). Past counterfactual conditionals are marked with the counterfactual marker *to* in the protasis and the non-recent past *te* in the apodosis, as shown in (16). Based on these data we can see that the conditionals are not distinguished according to the possible/counterfactual divide, as in Nafsan and Maʋ̌ea for example. Instead, the counterfactual conditionals are distinguished according to their temporal reference, as the future counterfactuals are always marked by the irrealis and the potential *e*, and the past counterfactuals are marked by the counterfactual past/present *to* and the non-recent past *te* (von Prince et al., 2019d). Figure 9.2 shows the distribution of these meanings in the branching-times model proposed by von Prince et al. (2019d:200).

Table 9.2: Paradigms of TMA and subject markers, from Franjieh (2012:114,118,122)

	Recent past	Non-recent past	Irrealis
1SG	*na-**m***	*na-**rr***	*na-**ø***
2SG	*o-**m***	*o-**rr***	***f**-o*
3SG	***mwe***	***te***	***bV***
1DU.INCL	*ro-**m***	*ro-**rr***	*ro-**ø***
1DU.EXCL	*maro-**m***	*maro-**rr***	*maro-**ø***
2DU	*moro-**m***	*moro-**rr***	*moro-**ø***
3DU	***mo**-ro*	***te/to**-ro*	***b**-ro*
1PC.INCL	*su-**m***	*su-**rr***	*su-**ø***
1PC.EXCL	*masu-**m***	*masu-**rr***	*masu-**ø***
2PC	*musu-**m***	*musu-**rr***	*musu-**ø***
3PC	***mu**-su*	***te**-su*	***b**-su*
1PL.INCL	*yi-**m***	*yi-**rr***	*yi-**ø***
1PL.EXCL	*ma-**m***	*ma-**rr***	*ma-**ø***
2PL	*mi-**m***	*mi-**rr***	*mi-**ø***
3PL	*e-**m***	*e-**rr***	***f**-e*

(14) *Jon, bone **fō** ktu, lo mwen-amrō teere nyer **e**-ve lol.*
John time 2SG.IRR take then GEN.CL-2DU.POSS child PL POT-COP.IRR plenty
'If you marry John, you will have many children.' (ib1-fortune-na.35, von Prince et al. 2019d:198)

(15) *He **e-na-ø** plei, lo ge rrang **e-b** gurr mōl mōn*
if POT-1SG-IRR play then SUB blood POT-IRR.3SG flow back again
'If I played then the blood would flow again.' (ib1-lafet-na.27, von Prince et al. 2019d:198)

(16) *ō **to** yene Adam lo mwena-mrō mane **te** lam.*
2SG CF marry Adam then POSS.CL-2DU.POSS money NREC.PST.3SG big
'If you had married Adam, you two would have been rich.' (at1-fortune-na.24, von Prince et al. 2019d:198)

As we can see in Figure 9.2, the irrealis in North Ambrym covers the area of future possibilities and future counterfactuals. The past and present counterfactuals are expressed by a different marker. There is also the potential marker which has more specific modal values within the irrealis meaning. In comparison to the irrealis category in Nafsan and Maʋ̌ea, the irrealis in North Ambrym refers only to a subpart of their semantic domain of irrealis. While in Nafsan and Maʋ̌ea irrealis refers to possibilities and counterfactuals with any temporal reference, in North Ambrym the irrealis only refers to future possibilities and future counterfactuals. Based on this case of dissimilarity between the irrealis categories, we could follow de Haan (2012) in arguing that the category of "irrealis" fails to predict a universal TMA reference. However, both types of categories called "irrealis", the

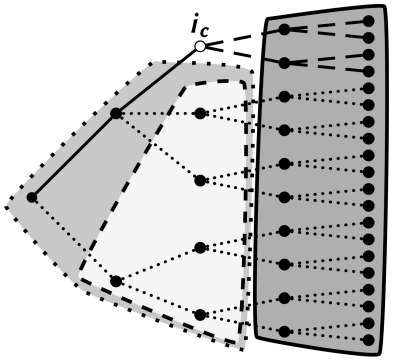

Figure 9.2: The irrealis domain in North Ambrym, Solid outline: irrealis; dashed outline: counterfactual (past/present); dotted outline: non-recent past, from von Prince et al. (2019d:200)

irrealis in Nafsan and Maŭea and the irrealis in North Ambrym, belong to the domain of irrealis meaning, which is defined by the reference to non-actual worlds. Thus, depending on the linguist's choice, a category within this space can be labeled as "irrealis". Sometimes a more specific label is found more appropriate given the TMA paradigm of the studied language, for instance von Prince (2015) choses the label "potential" in Daakaka for a marker with roughly the same reference as the irrealis in North Ambrym (von Prince et al., 2019d). However, given that there is already another marker labeled as "potential", Franjieh (2012) labels the given category as irrealis. These difference in the nomenclature of language-specific categories should not be seen as a problem for studying the typological tendencies regarding the expression of the irrealis mood. The issue of comparing different categories labeled as "irrealis" can be easily solved by studying their fine-grained values as done in von Prince et al. (2019d). Once we decide that we are interested in understanding the grammatical expression of the meanings in the irrealis domain, we expect to come across markers carving up different areas of this space, as also suggested by Roberts (1990) and Van Gijn & Gipper (2009). In some languages the category in question will refer to the whole extent of non-actual worlds, as in Nafsan and Maŭea, and in others there will be more than one obligatory marker in the same space, as in North Ambrym. Moreover, there is additional evidence that the distribution of TMA categories in the irrealis domain is not random. As argued in Section 5.3.1, the paradigm effects of blocking play an important role in attributing different distributions to different markers. Crucially, if a language has a marker dedicated to a specific irrealis meaning, such as counterfactual past/present in North Ambrym, the irrealis marker is expected to be pragmatically blocked for referring to that area too. And while in Nafsan and Maŭea the counterfactual markers were optional and not in the same morphological slot as irrealis, which allowed them to co-occur, the counterfactual *to* and irrealis in North Ambrym are both equally obligatory in expressing their respective meanings and they occur in the same morphological slot, if we disregard the fact that irrealis is partially fused with the subject markers. Thus, the fact that the irrealis in North Ambrym does not refer to counterfactual past/present can be explained pragmatically by the presence of *to*, which is already specified for those meanings.

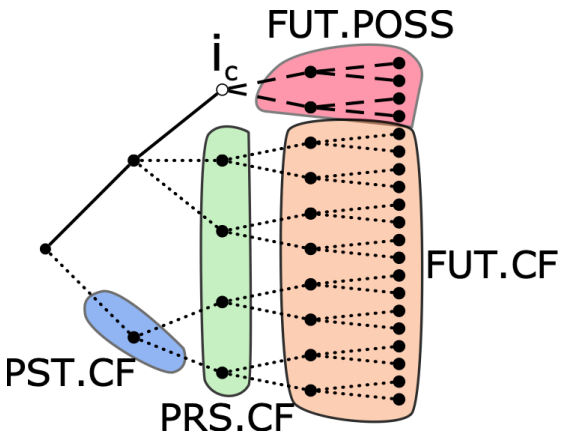

Figure 9.3: Semantic areas of past counterfactual PST.CF, present counterfactual PRS.CF, future counterfactual FUT.CF, and possible future meaning FUT.POSS, based on von Prince et al. (2019d)

This discussion on different spreads of functions in the irrealis domain leads us to another set of cross-linguistic predictions of the branching-times model. These predictions include relationships between meanings which can be analyzed in the same way as in a semantic map. The areas shown in Figure 9.3 (repeated from Section 8.5.2) represent different areas of the irrealis domain, which are ordered according to their semantic closeness. As a semantic map, this model predicts that, for instance, a given marker is expected to express the past counterfactual and the possible future only if it also expresses the present and future counterfactual. And while TMA markers can specialize for only one of the areas, when they denote more than one of the areas in Figure 9.3 they need to be adjacent to one another. This reasoning is very similar to the hierarchical representation of irrealis meanings by Van Gijn & Gipper (2009), shown in Figure 7.1 in Section 7.1.1. However, the difference between Van Gijn & Gipper's (2009) hierarchy and the branching-times model is that the branching-times model also incorporates the temporal meanings in the modal domain, which makes the represented meanings more granular, and, thus, easier to explain the specialization of specific markers to a single irrealis domains, such as present/past counterfactual in North Ambrym.

9.3 The definition of irrealis in relation to other categories

In this section I provide some final observations about the nature of irrealis as a cross-linguistic category. I show that many misunderstandings about the meaning of irrealis come from the fact that irrealis is closely tied to the future tense and to the expression of modal flavors. Thus, the benefit of accepting this category cross-linguistically is that it can unite the expression of future tense and modality, as well as mood and modality, in languages in which these notions are not grammatically distinguished to the same extent as in Indo-European languages.

As mentioned in Section 7.3, one of the concerns regarding the category of irrealis is whether the categories labeled as irrealis could be reanalyzed as future tense in some languages. The premise of proposing this analysis is that all instances of irrealis might in fact be better understood as fu-

ture tense cross-linguistically. This assumption was made by Dahl & Velupillai (2013a) and Velupillai (2016) in their typological studies of future tense. However, this work, as well as many others, have shown that linguists typically choose the label "irrealis" for categories that in addition to future possibility express more modal meanings. These meanings include present, past, and future counterfactual reference, and interaction with modal flavors. In terms of our branching-times model, the future tense can then be contrasted to irrealis by referring only to the possible future, whereas irrealis refers to the entire non-actual domain, as represented in Figure 9.4.

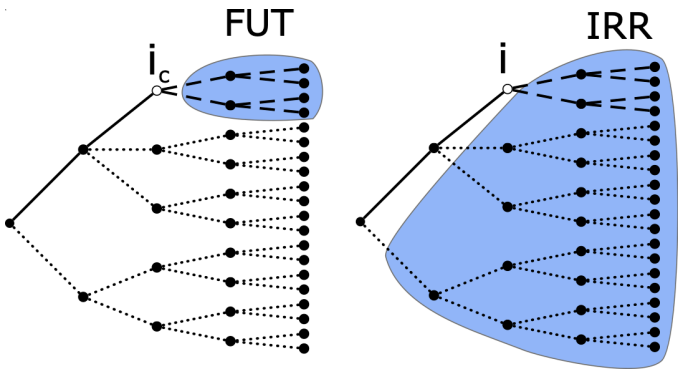

Figure 9.4: The domain of meaning expressed by future tense on the left and irrealis mood on the right (see model in Section 7.1.3)

As we can see in Figure 9.4, the meaning of irrealis comprises the meaning of future tense. Thus, it is only expected that in languages with irrealis, this category will be used to express the meaning of future. The advantage of uniting the meaning of tense and mood in the model of branching times is that it allows us to explain why a category with otherwise modal meanings can express future temporal reference. Equally, this model also supports the fact that many mood-prominent languages lack tense morphology (Bhat, 1999), such as Nafsan and many other Oceanic languages studied in this thesis.

The relationship between mood and tense as outlined above is mainly concerned with absolute future reference. However, when it comes to relative future, or what I call prospective aspect in this work, the process of distinguishing the two categories is slightly different. Prospective aspect is the category that places the Topic Time in the pre-time of the described event (Klein, 1994). As already shown in Section 5.3.1 and 8.3.2, this category encodes a relation of sequentiality between the Topic and Situation Time and depending on the language this can be realized in realis and irrealis domains, as in Nafsan. As an aspectual category, it can appear in any temporal or modal reference, and could thus be mistaken for the irrealis category. In this respect, the only way to distinguish the prospective from the irrealis is to find the core meaning that governs the distribution of the category. For instance, in Nafsan we find many uses of irrealis in contexts in which the event marked by irrealis precedes (17) or overlaps with the Topic Time, as in (18) and (19). Examples (17) and (18) express past and present counterfactuals, and (19) a present epistemic reading. Thus, the definition of the prospective in which the event needs to follow the Topic Time could not describe these cases.

(17) ***Ka=f*** *mer pei patlas-i-ø.*
1SG.IRR=COND CF first meet-TS-3SG.OBJ
'If only I had met him.' (AK1-045-01)

(18) ***ke=f*** *mer tik-ki volkano Tanna, ke=fo wi.*
3SG.IRR=COND CF not.have-TR volcano Tanna 3SG.IRR=PSP.IRR good
'it would be good if there was no volcano on Tanna.' (AK1-046-01)

(19) *Ado* ***ke=mas*** *to naal blu.*
Ado 3SG.IRR=must stay basket blue:BI
'Ado must be in the blue basket.' Repeated (45) from Section 8.4 (AK1-019-01, 00:02:50.251-00:02:57.910)

The situation in Nafsan is even more complex because the prospective markers are themselves specified for realis and irrealis values. The markers *po* and *fo* denote prospective realis and irrealis respectively, and their morphological stem mutation reflects the requirement that all verbs starting with *p-* mutate into having an initial *f-* after irrealis proclitics (Thieberger, 2006). The question here is how we can be certain that the realis/irrealis distinction is the one that semantically describes the contrast between *po* and *fo*. This leads us to the next argument regarding the cross-linguistic properties of irrealis. In Section 8.4 I discussed the occurrence of *fo* and irrealis with different modal flavors, such as deontic (20) and epistemic (21). These meanings seem to have an important relation to irrealis, because irrealis (with and without *fo*) is preferred over the general proclitic when it comes to expressing deontic and epistemic meanings (see Section 8.4). Thus, besides the morphological stem mutation which binds it to the irrealis proclitics, *fo* seems to also be tied to the expression of certain modal flavors, which would not be expected from its prospective meaning alone. Analyzing it as prospective irrealis allows us to capture this pattern.

(20) *Ga* ***ke=fo*** ***kano*** *lak.*
3SG 3SG.IRR=PSP.IRR cannot marry
'He can't get married.' (because he is a priest and it is forbidden) Repeated (38) from Section 8.4 (AK1-156-04)

(21) ***Rak=fo*** ***kano*** *kus eñrom kes, kes nen i=sesp̃al toop.*
3DU.IRR=PSP.IRR cannot hide inside box box DEM 3SG=tiny very
'They can't be hiding in the box, that box is too small.' Repeated (34) from Section 8.4 (AK1-147-12, 00:03:19.385-00:03:24.781)

Crucially, in comparison to prospective aspect and future tenses in Indo-European languages, the irrealis and the prospective irrealis *fo* in Nafsan are not neutral with regard to modality and modal flavors. As argued in Section 8.4, the meanings of irrealis and *fo* in (20) and (21) are not predictive, instead they contribute to the expression of different kinds of possibilities with any temporal reference. Although at this point we do not know why certain modal flavors are expressed by irrealis in Nafsan and others are not, a cross-linguistic definition of irrealis needs to be enriched to account for different kinds of interactions between irrealis and the expression of modal flavors. This is especially relevant for Oceanic languages in which irrealis has been reported to play a role in the expression

of modal flavors. In Daakaka, for example, the potential marker and its negative counterpart, the necessity marker, can express epistemic (22) and deontic possibility (23), regardless of the temporal reference.

(22) *kyun te baséé swa mwe ka ka* ***wo*** *mas i maa kyun*
just CONJ bird one REAL say MOD.REL POT must COP dove just
'then one bird said, it must have been the dove' (von Prince, 2015:89)

(23) *te mw=i or yo swa na vyanten kevene ya to kuowilye ka*
CONJ REAL=COP place taboo one COMP man every 3PL REAL.NEG know MOD.COMP
*ya=**n** vyan*
3PL=NEC go
'it's a sacred place where not everybody can go.' (von Prince, 2015:371)

The interconnectedness between irrealis and the expression of modality shows that the traditional Indo-European distinction between mood and modality might not apply to languages with irrealis. And although from an Indo-European perspective, it might appear that irrealis is a polyfunctional category which unites different expressions of tense, mood, and modality, by adopting a model of branching times, a single definition of irrealis as referring to non-actual worlds is sufficient to account for the distribution of its functions.

Part V

Conclusion

Chapter 10

Conclusion

In this chapter I offer a summary of the main arguments made in this thesis and relate them to the relevant debates in the literature. I show that by adopting an approach of understanding the fine-grained semantics of TMA in Nafsan and Oceanic languages, this thesis has contributed to evaluating the cross-linguistic validity of the perfect aspect and the related iamitive gram, as well as the realis/irrealis distinction.

The starting point for the investigation of both perfect aspect and realis/irrealis mood in Nafsan was the reference grammar of Nafsan by Thieberger (2006) in which three paradigms of subject markers as well as additional TMA markers are labeled as perfect, realis, and irrealis. The main objective of analyzing these categories in Nafsan was to describe their semantics and contrast them with the proposed definitions of these categories in the literature, as discussed in Chapter 1. The methodological approach of this thesis consisted of the corpus (Thieberger, 1995–2018) study, which allowed me to form hypotheses about the meaning of these categories (see Sections 5.1.2 and 8.2). These hypotheses were then tested through storyboards and questionnaires. One of the contributions of this study is the usage and creation of storyboards as semantic stimuli which minimize the effect of translation, and can be adapted to the study of any semantic categories. While some of the storyboards relied on the existing material from Totem field storyboards, most of the storyboards were created to target particular modal and aspectual categories of interest in the MelaTAMP project. I also created two storyboards (Krajinović, 2018c,b) that contain perfect-like meanings related to the proposed iamitive and 'already' properties. Since these storyboards are open access (see Chapter 3), they can be used in future research on other languages, which can facilitate direct comparison of TMA meanings in diverse languages. These methods are described in detail in Chapter 3.

Some of the main challenges for the description of the perfect proclitics and the marker *pe* as perfect in Nafsan were: a) the lack of data on some basic perfect functions, such as experiential and universal, and b) the existence of an additional function of change of state which has been said to characterize iamitives and the particle 'already' (see Chapter 4). Thus, the initial hypotheses were that the perfect in Nafsan could be reanalyzed as a iamitive or 'already'. The storyboard and questionnaire elicitation showed that the perfect marking in Nafsan has almost all meanings associated with the perfect aspect: resultative, anterior, experiential, universal, and adverbial restrictions simi-

lar to the English perfect (see Section 5.2.1). However, it also has the additional meaning of change of state, and duality effects with negation as a result of the change-of-state meaning (see Section 5.2.2). The fact that almost all perfect functions, as well as the adverbial restrictions with present reference, are characteristic of *pe* in Nafsan was taken as evidence that we are dealing with the category of perfect aspect and not with iamitives, as they are not expected to have experiential and universal meanings (Olsson, 2013; Dahl & Wälchli, 2016). Equally, if *pe* had the meaning of 'already', it would have to express the meaning of expectedness, but since this is the case in only a restricted number of contexts (see Section 5.2.3), it cannot be reanalyzed as 'already'. There are also several semantic and typological contributions within each of the analyzed domains of the meaning of *pe*. Table 10.1 summarizes the main contributions of the study of the Nafsan perfect to the areas of semantics and typology, based on the analysis of the perfect in Nafsan in Chapter 5.

In Chapter 5 I argue that the results of the study of perfect in Nafsan show that Klein's (1994) definition of perfect as placing the Topic Time in the posttime of Situation Time can best explain the different readings associated with it. Additionaly, I argue that iamitives are not only an inadequate label for the case of *pe* in Nafsan, but their proposed status as a cross-linguistic category is also problematic. The main reason for that is that Olsson's (2013) and Dahl & Wälchli's (2016) definition of iamitives as being defined by the meaning of change of state is not viable. Based on my work on the Nafsan perfect, iamitives cannot be defined by the meaning of change of state, because a) the occurrence of this meaning with perfects can be analyzed through aspectual coercion, b) this meaning can be expressed alongside other perfect functions, such as experiential and universal, not predicted by iamitives, and c) there are other available explanations for markers analyzed as iamitives, e.g. they could be reanalyzed as 'already', or paradigm effects block their use with certain meanings. In order to find additional evidence for these claims made in Chapter 5, I analyzed markers labeled as perfect or 'already' in four additional Oceanic languages – Toqabaqita, Unua, Niuean, and Māori. The study of these languages in Chapter 6 provided additional evidence that a single marker can have the meaning of change of state and other perfect meanings, such as experiential and universal, which are not a part of the iamitive definition. All studied languages express resultative, anteriority, experiential, and the change-of-state meaning with their respective perfect markers. The universal meaning is also expressed by all languages except Niuean. The semantic map of the perfect aspect (see also Section 6.2.2) in Nafsan, Toqabaqita, and Unua in Figure 10.1 illustrates the most common spread of perfect functions among the studied languages. This semantic map also shows that the meaning of 'hot news' is expressed by a different marker in Nafsan, Toqabaqita, and Unua, which, as a more specific marker for that meaning, blocks the usage of the perfect. When a language does not have a more specific marker for the meaning of 'hot news', as in Māori, then the perfect is expected to be able to express it, as it happens in Māori. Thus, the study of Toqabaqita, Unua, Niuean, and Māori showed that the results obtained on the Nafsan perfect data can easily carry over to other Oceanic languages. My proposal for a perfect semantic map also enabled us to visually represent the relationships between different meanings of perfect and 'already'. Crucially, this semantic space contains meanings whose distributions can be well described by adhering to the existing categories of perfect aspect and 'already' (Section 6.2.2). Positing a new typological category consisting of

the meaning of change of state and the resultative perfect, with the optional reference to expectedness does not capture any new insight on the clustering of these meanings (Section 6.4). Moreover, through analyzing Nafsan and other Oceanic languages, I have provided tools, such as aspectual coercion (Section 5.2.2), paradigm blocking effects (Section 5.3.1) or meaning compatibility (Section 5.3.2), that can explain why and how in some languages this semantic space is more granular and in others covered by larger more general categories.

Table 10.1: Summary of contributions of the Nafsan perfect analysis to semantics and typology

Semantics	– in a presence of a past temporal adverbial, the perfect is interpreted as past or future perfect, Section 5.2.1
Typology	– tenseless languages *can* have adverbial restrictions with the perfect (contra Giorgi & Pianesi, 1997)
Semantics	– states marked by perfect in Nafsan are aspectually coerced into changes of states, Section 5.2.2
Typology	– if aspectual coercion can explain the meaning of change of state occurring with perfects, then iamitives are not needed to explain it (contra Olsson, 2013; Dahl & Wälchli, 2016) – since the perfect aspect can also have the meaning of change of state together with other non-iamitive functions, iamitives cannot be uniquely defined by the presence of that meaning (contra Olsson, 2013; Dahl & Wälchli, 2016)
Semantics	– duality effects in Nafsan are a consequence of the aspectual coercion into a change-of-state meaning and are not related to 'already', Section 5.2.3
Typology	– duality is not necessarily a criterion for determining if a marker is a iamitive or 'already' (contra Vander Klok & Matthewson, 2015)
Semantics	– the expectedness meaning arises independently of the Nafsan perfect and does not belong to its semantic definition, Section 5.2.3
Typology	– the meaning of expectedness arises pragmatically and cannot be considered to define iamitives semantically (contra Olsson, 2013)
Semantics	– the 'hot news' meaning in Nafsan is not expressed by the perfect because the prospective *po* has that function, which blocks the perfect *pe* from those uses, Section 5.3.1
Typology	– a lack of a certain meaning otherwise expected to be expressed by that category can be a result of language-specific paradigm effects and not necessarily a sign of a different category, such as iamitives
Semantics	– the perfective *su* can co-occur with the perfect in most of its meanings, but its core meaning is the perfective aspect and not perfect, Section 5.3.2
Typology	– the aspectual markers called "iamitives" might in fact be simply compatible with certain meanings of perfect or 'already', while their core meanings belong either to the perfect, 'already', or some other aspectual category

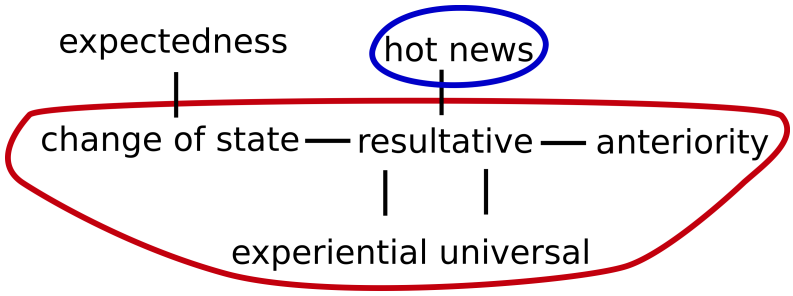

Figure 10.1: Semantic map of Nafsan, Toqabaqita, and Unua with the perfect in red and another aspectual marker in blue

Regarding the study of realis and irrealis mood, the main challenges to analyzing the subject proclitics in Nafsan as realis and irrealis (Thieberger, 2006) were a) the occurrence of realis in different future and modal contexts, which belong to the irrealis domain, and b) interchangeability of realis and irrealis in contexts in which irrealis would be expected (Section 8.2). Another concern was also the possibility that realis/irrealis mood could be interpreted as non-future/future tense (Section 7.3). In Chapter 8 I investigated different aspects of the meaning of subject proclitics labeled as realis and irrealis by Thieberger (2006), and based on the results from their distributions in the corpus as well as in the storyboard and questionnaire elicitations, I proposed the following reanalysis (see Section 8.3). The realis subject proclitics are underspecified for TMA meanings, which means they are general subject marking of person and number, while the irrealis subject proclitics indeed denote the irrealis mood. The meaning of irrealis is defined by its reference to non-actual worlds, represented in the model of branching times in Figure 10.2, see also Section 7.1.3. Realis, on the other hand, is defined as referring only to the actual world, that is the past and the present. In Chapter 8 I used different semantic contexts as evidence to argue for the underspecified semantics of general proclitics and the specified irrealis meaning of irrealis proclitics in Nafsan. These arguments are summarized in Tables 10.2 and 10.3.

Table 10.2: Main arguments for the underspecification of general proclitics in Nafsan

General proclitic
– occurs with all available TMA markers, Figure 8.1
– occurs in past, present, future contexts, Section 8.3.1
– occurs with different types of modal flavors, Section 8.4
– interchangeable with irrealis in protases of counterfactual and future-possibility conditional clauses, Section 8.5
– interchangeable with irrealis in counterfactual evaluative/timitive complement clauses, Section 8.6

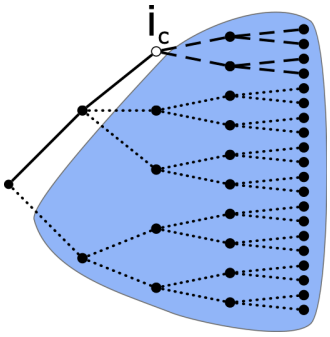

Figure 10.2: The domain of meaning expressed by irrealis proclitics in Nafsan (see model in Section 7.1.3)

Table 10.3: Main arguments for the irrealis meaning of irrealis proclitics in Nafsan

Irrealis proclitic
– combines with the prospective irrealis *fo*, Figure 8.1
– occurs in imperatives and prohibitives, Section 8.3.2
– occurs in wishes both in main clauses (Section 8.3.2) and complement clauses (Section 8.6)
– preferred choice for epistemic and deontic modal flavors, Section 8.4
– preferred in protases of counterfactual and future-possibility conditional clauses, Section 8.5
– almost the only choice in apodoses of all types of conditionals, Section 8.5
– occurs in counterfactual complement clauses, Section 8.6

We can see from Table 10.2 that the analysis of general proclitics as underspecified for TMA correctly predicts their usage with different temporal references and in different TMA environments. However, most of these environments contain specific TMA markers or are a part of specific modal subordinate clauses. Another explanation was needed to account for the distribution of general and irrealis proclitics in main clauses, in which the general proclitics cannot as easily receive irrealis meanings. In order to explain this, I proposed that the general and irrealis proclitics are in pragmatic competition, such that irrealis is the stronger item that should be used whenever its presupposition of referring to non-actual worlds is satisfied in the common ground. If the irrealis is not used and the general proclitic as the weaker item is used instead, due to the Maximize Presupposition principle there is an implicated presupposition that the reference to non-actual worlds is false. This gives rise to the meaning of realis when the general proclitic is used (Section 8.7). Nevertheless, Nafsan presents us with an additional level of complexity, namely the fact that the general and irrealis proclitics are interchangeable in many contexts in which irrealis would be more appropriate, because its presupposition is satisfied in those contexts. I argued in Section 8.7 that there is an additional economy principle (1) stemming from Grice's maxim of quantity, additionally supported by psycholingustic evidence. This principle explains why the general proclitic occurs with the irrealis meanings only in highly specific contexts, such as with specific TMA markers. Although irrealis is

still preferred as the more informative choice, if the occurrence of irrealis is redundant, the economy principle can counteract the choice of irrealis. The understanding that this principle might play a role in allowing the interchangeability of two markers has important consequences for the pragmatics of TMA, as none of the approaches discussed in Sections 7.2.2 and 7.2.3 can explain what allows the interchangeability of two markers in specific contexts.

(1) **Economy principle**:
If the context is specific enough, use the least specific grammatical marker needed.

In Chapter 9, the analysis of realis and irrealis meanings made for Nafsan was compared to several other Oceanic languages. As shown on the case of Wogeo in Section 9.1 and also hypothesized for Unua in Section 7.2.1, in languages said to have portmanteau subject markers it is not uncommon for one paradigm to be semantically underspecified for TMA meanings (see also Cristofaro, 2012). This type of reanalysis can explain at least some of the problems reported for realis and irrealis occurring with "unexpected" meanings. If a paradigm can be reanalyzed as a general subject marking, then it is not tied anymore to specific TMA contexts, and any additional TMA effects associated to it can be explained through pragmatics, as in the case of Nafsan above. Regarding the cross-linguistic diversity of irrealis, frequently reported as problematic in the literature (Bybee, 1998; de Haan, 2012), I found that while irrealis markers might refer to different modal domains in different languages, they are all still a part of the same irrealis domain represented in Figure 10.2, see Section 9.2.2. Moreover, the existence of dedicated markers for one specific domain might have the effect of blocking the usage of an otherwise more general irrealis marking, similarly to the case of perfect and 'hot news' above.

The approach of this thesis combined the study of typological tendencies and formal semantic methods. The initial research questions about the cross-linguistic validity of perfect aspect and realis/irrealis mood as linguistic categories were first answered though the prism of Nafsan. A detailed semantic study of these categories in Nafsan informed us about the possible new angles for improving our understanding of these and related TMA categories. Specific issues studied in Nafsan were then compared to similar situations in other Oceanic languages, which provided a slightly larger typological outlook. The restriction to the Oceanic context, with only occasional reference to other language families, was necessary in order to maintain the relevance of the discussed issues, such as the question of iamitives and underspecification of portmanteau subject markers. The additional Oceanic languages discussed in this work were used to demonstrate the applicability of analyses proposed for perfect and realis/irrealis categories in Nafsan. Moreover, several cross-linguistically testable proposals for the semantic space of perfect and irrealis were also made. These are the semantic map of perfect and 'already' presented in Section 6.2.2 and the branching-times model of irrealis (von Prince et al., 2019d) presented in Section 7.1.3 and in Figure 10.2. The outlook for future research in this area concerns evaluating the approach and methods used in this thesis by applying them to diverse languages. By using fine-grained semantic tests and relating my results to research questions of typological nature, I aimed to show that we can gain more precise understanding of language-specific phenomena as well as the semantics of cross-linguistic TMA categories.

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Appendix A

Examples and languages

For the ease of navigating the large number of examples and tables in different languages in this thesis, this chapter offers a list of all the linguistic examples and tables containing linguistic paradigms per chapter, accompanied by the language represented in the example or the table, together with its ISO 639-3 code.

Chapter 1	
Example	Language
(1)	Jabêm [jae]
(2)	Jabêm [jae]
(3)	Jabêm [jae]
(4)	Nafsan [erk]
(5)	Nafsan [erk]
(7)	Nafsan [erk]
(8)	Nafsan [erk]
(9)	Nafsan [erk]
(10)	Nafsan [erk]

Chapter 2	
Example	Language
(1)	Nafsan [erk]
(2)	Nafsan [erk]
(3)	Nafsan [erk]
(4)	Nafsan [erk]
(5)	Maʋ̌ea [mkv]
(6)	Maʋ̌ea [mkv]
(7)	Nafsan [erk]
(8)	Nafsan [erk]
(9)	Daakaka [bpa]

(10) Daakaka [bpa]
(11) Daakie [ptv]
(12) Daakie [ptv]
(13) Daakie [ptv]
(15) Saliba/Logea [sbe]
(16) Koro [kxr]
(17) Unua [onu]
(18) Daakie [ptv]
(19) Daakaka [bpa]
(20) Daakaka [bpa]
(22) Lelepa [lpa]
(23) Lelepa [lpa]
(24) Maʋ̌ea [mkv]
(25) Maʋ̌ea [mkv]
(26) Nafsan [erk]
(27) Nafsan [erk]
(28) Nafsan [erk]
(29) Nafsan [erk]
(30) Nafsan [erk]
(31) Nafsan [erk]
(32) Nafsan [erk]
(33) Nafsan [erk]
(34) Nafsan [erk]
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(36) Nafsan [erk]
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(48) Nafsan [erk]
(49) Nafsan [erk]
(50) Nafsan [erk]
(51) Nafsan [erk]

(52)	Nafsan [erk]
(53)	Nafsan [erk]
(54)	Nafsan [erk]
(55)	Nafsan [erk]
(56)	Nafsan [erk]
(57)	Nafsan [erk]
(58)	Nafsan [erk]

Table	Language
2.1	Daakie [ptv]
2.2	Neverver [lgk]
2.3	Wogeo [woc]
2.4	Maʷea [mkv]
2.5	Paamese [pma]
2.6	Sivisa Titan [ttv]
2.7	Nafsan [erk]
2.8	Nafsan [erk]
2.9	Nafsan [erk]
2.10	Nafsan [erk]
2.11	Nafsan [erk]
2.12	Nafsan [erk]
2.13	Nafsan [erk]
2.14	Nafsan [erk]

Chapter 3	
Example	Language
(1)	English [eng]
(2)	English [eng]
(3)	English [eng]
(4)	English [eng]
(5)	Nafsan [erk]
(6)	Nafsan [erk]
(7)	Nafsan [erk]
(8)	Nafsan [erk]

Chapter 4	
Example	Language
(2)	English [eng]
(3)	English [eng]
(4)	English [eng]

(5) English [eng]
(6) English [eng]
(7) English [eng]
(8) English [eng]
(9) English [eng]
(10) English [eng]
(11) English [eng]
(12) English [eng]
(13) English [eng]
(14) English [eng]
(15) English [eng]
(16) English [eng]
(18) English [eng]
(19) English [eng]
(20) English [eng]
(21) English [eng]
(22) English [eng]
(23) English [eng]
(24) English [eng]
(25) English [eng]
(26) English [eng]
(27) English [eng]
(28) German [deu]
(29) German [deu]
(30) Thai [tha]
(31) English [eng]
(32) Indonesian [ind]
(33) Thai [tha]
(34) Mandarin Chinese [cmn]
(35) Mwotlap [mlv]
(36) English [eng]
(37) Vietnamese [vie]
(38) English [eng]
(39) Indonesian [ind]
(40) Thai [tha]
(41a) Mwotlap [mlv]
(41b) Mwotlap [mlv]
(42) Mandarin Chinese [cmn]
(43) Indonesian [ind]
(44) Indonesian [ind]

(45)	Toqabaqita [mlu]
(46)	Nêlêmwa [nee]
(47)	Tongan [ton]
(48)	Tongan [ton]
(49)	Tongan [ton]
(50)	English [eng]
(51)	Tongan [ton]
(52)	Niuean [niu]
(53)	Niuean [niu]
(54)	Niuean [niu]
(55)	Javanese [jav]
(56)	Javanese [jav]
(57)	Javanese [jav]
(58)	Javanese [jav]

Chapter 5

Example	Language
(1)	Nafsan [erk]
(2)	Nafsan [erk]
(3)	Nafsan [erk]
(4)	Nafsan [erk]
(5)	Nafsan [erk]
(6)	Nafsan [erk]
(7)	Nafsan [erk]
(8)	Nafsan [erk]
(9)	Nafsan [erk]
(10)	Nafsan [erk]
(11)	Nafsan [erk]
(12)	Nafsan [erk]
(13)	Nafsan [erk]
(14)	Nafsan [erk]
(15)	Nafsan [erk]
(16)	Nafsan [erk]
(17)	Nafsan [erk]
(21)	Nafsan [erk]
(22)	Nafsan [erk]
(23)	Nafsan [erk]
(24)	Nafsan [erk]
(25)	Nafsan [erk]
(26)	Nafsan [erk]

(27) Nafsan [erk]
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(30) Nafsan [erk]
(31) Nafsan [erk]
(32) Nafsan [erk]
(33) Nafsan [erk]
(34) Nafsan [erk]
(35) Nafsan [erk]
(36) Nafsan [erk]
(37) Nafsan [erk]
(38) Nafsan [erk]
(39) English [eng]
(40) English [eng]
(41) Nafsan [erk]
(42) Nafsan [erk]
(43) Nafsan [erk]
(44) Nafsan [erk]
(46) Nafsan [erk]
(47) Nafsan [erk]
(48) Nafsan [erk]
(49) Nafsan [erk]
(50) Nafsan [erk]
(51) Nafsan [erk]
(52) Nafsan [erk]
(53) Nafsan [erk]
(54) English [eng]
(55) Nafsan [erk]
(56) Nafsan [erk]
(58) English [eng]
(59) Nafsan [erk]
(60) Nafsan [erk]
(61) Nafsan [erk]
(62) Nafsan [erk]
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(64) Nafsan [erk]
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(66) Nafsan [erk]
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(68) Nafsan [erk]

(69)	Nafsan [erk]
(70)	Nafsan [erk]
(71)	Nafsan [erk]
(72)	Nafsan [erk]
(73)	Nafsan [erk]
(74)	Nafsan [erk]
(75)	Nafsan [erk]
(76)	Nafsan [erk]
(77)	Nafsan [erk]
(78)	Nafsan [erk]
(79)	Nafsan [erk]
(80)	Nafsan [erk]
(81)	Nafsan [erk]
(82)	Nafsan [erk]
(83)	Nafsan [erk]
(84)	Nafsan [erk]
(85)	Nafsan [erk]
(86)	Nafsan [erk]
(87a)	Nafsan [erk]
(87b)	Nafsan [erk]
(88a)	Nafsan [erk]
(88b)	Nafsan [erk]
(89)	English [eng]

Table	Language
5.1	Nafsan [erk]

Chapter 6	
Example	Language
(1)	Toqabaqita [mlu]
(2)	Toqabaqita [mlu]
(3)	Toqabaqita [mlu]
(4)	Toqabaqita [mlu]
(5)	Toqabaqita [mlu]
(6)	Toqabaqita [mlu]
(7)	Toqabaqita [mlu]
(8)	Toqabaqita [mlu]
(9)	Toqabaqita [mlu]
(10)	Toqabaqita [mlu]
(11)	Toqabaqita [mlu]

(12) Toqabaqita [mlu]
(13) Toqabaqita [mlu]
(14) Toqabaqita [mlu]
(15) Toqabaqita [mlu]
(16) Unua [onu]
(17) Unua [onu]
(18) Unua [onu]
(19) Unua [onu]
(20) Unua [onu]
(21) Unua [onu]
(22) Unua [onu]
(23) Unua [onu]
(24) Unua [onu]
(25) Unua [onu]
(26) Unua [onu]
(27) Unua [onu]
(28) Unua [onu]
(29) Unua [onu]
(30) Unua [onu]
(31) Unua [onu]
(32) Unua [onu]
(33) Unua [onu]
(34) Unua [onu]
(35) Unua [onu]
(36) Niuean [niu]
(37) Niuean [niu]
(38) Niuean [niu]
(39) Niuean [niu]
(40) Niuean [niu]
(41) Niuean [niu]
(42) Niuean [niu]
(43) Niuean [niu]
(44) Niuean [niu]
(45) Niuean [niu]
(46a) Niuean [niu]
(46b) Niuean [niu]
(47) Māori [mri]
(48) Māori [mri]
(49) Māori [mri]
(50) Māori [mri]

(51)	Māori [mri]
(52)	Māori [mri]
(53)	Māori [mri]
(54)	Māori [mri]
(55)	Māori [mri]
(56)	Māori [mri]
(57)	Unua [onu]
(58)	Vietnamese [vie]

Chapter 7	
Example	Language
(1)	Amele [aey]
(2)	Amele [aey]
(3)	Caddo [cad]
(4)	Manam [mva]
(5)	Manam [mva]
(6)	Nyikina [nyh]
(7)	Warrwa [wwr]
(8)	Limbu [lif]
(9)	Hualapai [yuf]
(10)	Unua [onu]
(11)	Unua [onu]
(12)	Unua [onu]
(13)	Unua [onu]
(14)	Unua [onu]
(15)	Unua [onu]
(16)	Unua [onu]
(17)	Unua [onu]
(18)	St’át’imcets [lil]
(19)	St’át’imcets [lil]
(20)	St’át’imcets [lil]
(21)	St’át’imcets [lil]
(22)	Mandarin Chinese [cmn]
(23)	Mandarin Chinese [cmn]
(24)	Mandarin Chinese [cmn]
(25)	Hausa [hau]
(26)	Hausa [hau]
(27)	Hausa [hau]
(29)	English [eng]
(30)	English [eng]

(31)	English [eng]
(32)	English [eng]
(33)	English [eng]
(34)	French [fra]
(35)	French [fra]
(36)	Toqabaqita [mlu]
(37)	Toqabaqita [mlu]
(38)	Toqabaqita [mlu]
(39)	Neverver [lgk]
(40)	Neverver [lgk]
(41)	Neverver [lgk]

Table	Language
7.3	Manam [mva]
7.4	Unua [onu]

Chapter 8

Example	Language
(1)	Lelepa [lpa]
(2)	Nafsan [erk]
(3)	Nafsan [erk]
(4)	Nafsan [erk]
(5)	Nafsan [erk]
(6)	Nafsan [erk]
(7)	Nafsan [erk]
(8)	Nafsan [erk]
(9)	Nafsan [erk]
(10)	Nafsan [erk]
(11)	Nafsan [erk]
(12)	Nafsan [erk]
(13)	Nafsan [erk]
(14)	Nafsan [erk]
(15)	Nafsan [erk]
(16)	Nafsan [erk]
(17)	Nafsan [erk]
(18)	Nafsan [erk]
(19)	Nafsan [erk]
(20)	Nafsan [erk]
(21)	Nafsan [erk]
(22)	Nafsan [erk]

(23) Nafsan [erk]
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(52) Nafsan [erk]
(53) Nafsan [erk]
(54) Nafsan [erk]
(55) Nafsan [erk]
(56) Nafsan [erk]
(57) Nafsan [erk]
(58) Nafsan [erk]
(59) Nafsan [erk]
(60) Nafsan [erk]
(61) Nafsan [erk]
(62) English [eng]
(63) English [eng]

(64) English [eng]
(65) English [eng]
(66) Nafsan [erk]
(67) Nafsan [erk]
(68) Nafsan [erk]
(69) Nafsan [erk]
(70) Nafsan [erk]
(71) Nafsan [erk]
(72) Nafsan [erk]
(73) Nafsan [erk]
(74) Nafsan [erk]
(75) Nafsan [erk]
(76) Nafsan [erk]
(77) French [fra]
(78) French [fra]
(79) French [fra]
(80) French [fra]
(81) Portuguese [por]
(82) Nafsan [erk]
(83) Nafsan [erk]
(84) Nafsan [erk]
(85) Nafsan [erk]
(86) Nafsan [erk]
(87) Nafsan [erk]
(88) Portuguese [por]
(89) Nafsan [erk]
(90) Portuguese [por]
(91) Nafsan [erk]
(92) Nafsan [erk]
(93) Nafsan [erk]
(94) Nafsan [erk]
(95) Nafsan [erk]
(96) Nafsan [erk]
(97) Nafsan [erk]
(98) Nafsan [erk]
(99) Nafsan [erk]
(100) Nafsan [erk]
(101) Nafsan [erk]
(102) Nafsan [erk]
(103) Nafsan [erk]

(104)	Nafsan [erk]
(105)	Navajo [nav]
(106)	Nafsan [erk]
(107)	Nafsan [erk]
(108)	Nafsan [erk]
(109)	Nafsan [erk]
(111)	Nafsan [erk]
(113)	Nafsan [erk]
(114)	Nafsan [erk]
(116)	German [deu]
(117)	German [deu]

Table	Language
8.1	Nafsan [erk]
8.2	Lelepa [lpa]
8.4	Nafsan [erk]
8.5	Nafsan [erk]
8.8	Nafsan [erk]

Chapter 9

Example	Language
(1)	Wogeo [woc]
(2)	Wogeo [woc]
(3)	Wogeo [woc]
(4)	Wogeo [woc]
(5)	Wogeo [woc]
(6)	Wogeo [woc]
(7)	Wogeo [woc]
(8)	Wogeo [woc]
(9)	Wogeo [woc]
(10)	Wogeo [woc]
(11)	Mav̌ea [mkv]
(12)	Mav̌ea [mkv]
(13)	Mav̌ea [mkv]
(14)	North Ambrym [mmg]
(15)	North Ambrym [mmg]
(16)	North Ambrym [mmg]
(17)	Nafsan [erk]
(18)	Nafsan [erk]
(19)	Nafsan [erk]

(20)	Nafsan [erk]
(21)	Nafsan [erk]
(22)	Daakaka [bpa]
(23)	Daakaka [bpa]

Table	Language
9.1	Wogeo [woc]
9.2	North Ambrym [mmg]

Appendix B

Questionnaire data

This appendix contains all the results of the elicitations of questionnaires in Nafsan. Most questions were answered by Lionel Emil, and some by Gray Kaltaƀau. For more details on the elicitation process see Chapter 3 and Section 3.3. Examples cited in the main text can easily be co-referenced with the data in the appendix – the number in parentheses in the beginning of each question in the appendix, such as (1), is referenced in the main text with the initials of the questionnaires, such as PQ, followed by the said number. Every question also contains the reference to the recording in my PARADISEC collection (Krajinović, 2017b). All the questions from the questionnaire are in bold and linguistic examples are in italics. There is typically more than one linguistic example per question, aiming at providing several possible constructions, and extending the context from the questionnaire when possible. All linguistic examples from Nafsan are morphologically segmented, but only some contain full glosses and free translation in English. In conjunction with this work, the corpus (Thieberger, 1995–2018), and the upcoming updated version of the Nafsan dictionary, these examples should be easy to gloss and analyze by other linguists. Nevertheless, these examples should be used with the accompanying recordings whenever possible, as possible mistakes in the transcription might have occurred.

B.1 The Perfect Questionnaire (Dahl, 2000c)

In order to quantify different constraints on the use of perfect in Nafsan, I used several tags in the Perfect Questionnaire, listed below.

POSS : possible among other options (typically general proclitics alone) NOTE: among possible options, one category can be preferred, or they can be equally acceptable

OBL : obligatory (no other grammatical options for the intended meaning)

AGR : agrammatical in the intended meaning

NEW1 : new meaning generated by the perfect

NEW2 : new meaning generated by the prospective

NO : not attested

ON : perfect is the only attested category

PS : polarity shift - negation without perfect in a context where perfect would be possible in English

QS : question shift - perfect obligatory in a question, but only possible in the answer

NEG : negation with perfect

RESULTS (number of occurrences):

POSS : 27

OBL : 5

AGR : 19

NEW1 : 17

NEW2 : 12

NO : 34

ON : 16

PS : 5

QS : 3

(1)[1] **[OBL]**[2] **(AK1-115-01)**[3] **[A: I want to give your sister a book to read, but I don't know which one. Are there any of these books that she READ already?]** B: Yes, she READ this book.

(1) *Ore, ga ki=pe fe natus ne.*

(2) *Ore, ga i=pe fe natus ne.*

(3) *Ore, ga ki=pe fe natus nen su.*

(4) *Ore, ga i=pe fe natus nen su.*

(5) **ga i=fe natus nen su.*

(1ex)[4] **[NEW2] [You are giving A a book and she has to read it. Then she forgot and says "I will read it, I will read it" and then you ask her again: Have you read it? A replies: 'yes, I did read the book'.]**

[1] This number refers to the number of the sentence given by the author, in this case Dahl (2000c).

[2] A tag I used for my own reference, present only in the Perfect questionnaire.

[3] The reference to the recording in my collection (Krajinović, 2017b).

[4] The mark "ex" refers to an extended context of the context under (1). These extended contexts were most often offered by the speaker.

(6) *ku=po fe natus ne?*

(7) *Ore, a=po fe natus ne.*

(2) [AGR] (AK1-115-01) [A: It seems that your sister never finishes books.] B: (That is not quite true.) She READ this book (= all of it).

(8) *A=lek-a-ø welkia kor-e-m i=ta fe silu natus nen mau.* I see your sister never finishes any books.

(9) *Eh i=tik, i=fe silu natus ne.*
No, She read this whole book (already).

(2ex1) [NEW2] [in the context from (1ex)]

(10) *I=po fe silu natus ne.*

(2ex2) [NEW2] [A asks: Did your sister read all of that book? B replies: Yes, she read all of it.]

(11) *Ore, ki=pe fe silu natus ne.*

(3) [POSS] (AK1-115-01) [Question: Is the king still alive?] No, he DIE.

(12) *I=tik, i=mat.*

(13) *I=tik, ki=pe mat.*

(14) *I=tik, i=pe mat.*

(3ex) [NEW2] ['po' is AFTER the UT!] [If the king is sick and about to die.]

(15) *i=ta m̃ol to ko i=po, i=po tfal?*

(16) *Eh, i=po mat. I=to pan ale i=po mat.*
He is about to die (he is breathing his last breath).

(17) *Eh, i=po mat. I=to pan go i=po mat.*
He is about to die (he is breathing his last breath).

(4) [POSS] (AK1-115-01) Question: You MEET my sister (at any time in your life up to now)?

(18) *Ku=nrus paatlas kor-e-k tete mal?*
Have you met my sister any time in your life?

(19) *kui=pe nrus paatlas kor-e-k tete mal?*

(20) *kui=pe paatlas kor-e-k temal?*

(4ex) [NEW2] [If you are planning to meet my sister and the time passes and I'm asking: Yesterday, did you meet her? (You are planning to do something at the exact time and the time passes by.)]

(21) *ku=po paatlas-i-ø go? Ku=po preg-i-ø?*

(5) [POSS] (AK1-115-01) [A child asks: Can I go now?] Mother: You DO your homework?

(22) *kai=pe tae pa malfa?*
Can I go now?

(23) *kai=pe tae pan malfane?*
Can I go now?

(24) *ku=pe preg nawesien gaag?*
Have you done your work?

(25) *ku=preg nawesien gaag?*

(5ex) [NEW2] [You send someone to make something, and when he comes back you say]

(26) *ku=po preg-i-ø?*
did you do (what I told you to do)?

(6) [POSS] (AK1-115-01) [Question: Do you know my sister?] Answer: Yes, I MEET her (so I know her).

(27) *ku=tae kor-e-k?*

(28) *ore, a=paatlas-i-ø.*

(29) *ore, kai=pe paatlas-i-ø go kai=pe tae.*
yes, I already met her so I know her.

(30) *kai=pe paatlas-i-ø preg-i-ø kai=pe tae.* I already met her so I know her.

(7) [POSS] (AK1-115-01) [Question: Can you swim in this lake? (=Is it possible for anybody to swim in this lake?)] Answer: Yes, at least I SWIM in it several times.

(31) *ru=tae los naimat ne?*

(32) *ore, kai=pe nrus los wes tete mal.*

(33) *ore, a=nrus los wes tete mal.*

(34) *ore, a=pe nrus los wes tete mal.*

(8) [AGR] (AK1-115-01) [Do you know what happened to me just an hour ago?] I WALK in the forest. Suddenly I STEP on a snake. It BITE me in the leg. I TAKE a stone and THROW (it) at the snake. It DIE.

(35) *ku=tae nafte kin i=paakor-ki wou malna i=po nom pa?*

(36) *ku=tae nafte kin i=paakor kineu i=po nrus pi malfane m̃as?*

(37) *a=pato/a=to siwer namlas. a=to trau kam m̃at i=skei. i=kat natu-o-k. a=wes faat i=skei. a=trau p̃akin kai=p̃kapn-i.*
I walk into forest.

(38) *a=to siwer namlas, a=wes faat iskei, a=trau p̃akin teflan me a=trau p̃kapn-i.*

(39) **kai=pe to siwer namlas, kai=pe wes faat i=skei, kai=pe trau p̃akin teflan me kai=pe trau p̃kapn-i.*

(9) [AGR] (AK1-116-01) [Do you know what happened to me yesterday?] I WALK in the forest. Suddenly I STEP on a snake. It BITE me in the leg. I TAKE a stone and THROW (it) at the snake. It DIE.

(40) *ku=tae nafte kin i=paakor-ki wou nanom?*

(41) *a=to siwer pan trau kam m̃at i=skei. A=kam-ti go i=trau kat natu-o-k. A=wes faat i=skei trau p̃kapn-i.*

(42) ***A=to*** *siwer namlas me* ***a=****kam-ø* *m̃at i=skei.* ***A=****kam-ti* *go*
1SG=PROG walk forest but 1SG=step-3SG.OBJ snake 3SG=one 1SG=step-3SG.OBJ and
i=*trau* *kat natuo-k.* ***A=****wes* *faat i=skei* *trau* *p̃kapun-i.*
3SG=really bite leg-1SG.POSS 1SG=take stone 3SG=one really kill-3SG.OBJ

(9) (Do you know what happened to me yesterday?) I WALK in the forest. Suddenly I STEP on a snake. It BITE me in the leg. I TAKE a stone and THROW (it) at the snake. It DIE. (AK1-116-01)

(9ex) [NEW1] [The boss orders X to call people, gather some words in Nafsan, and pay them. The employee reports on what she did addressing his demands one by one:]

(43) ***Kai=pe*** *sos-o-r* ***su,*** ***kai=pe*** *pestaf-i-r* ***su*** *ki* *nafsan,*
1SG.PRF=PRF call-TS-3PL.OBJ PFV 1SG.PRF=PRF talk-TS-3PL.OBJ PFV PREP language
rui=pe *tao* *nafsan faum* ***su,*** ***kai=pe*** *paktof-i-r.*
3PL.PRF=PRF give.me word new PFV 1SG.PRF=PRF pay-TS-3PL.OBJ
I called the people, I talked to them, they gave me new words, and I paid them. (AK1-116-01)

(44) ***Kai=pe*** *sos-o-r* ***su,*** *go* ***kai=pe*** *pestaf-i-r* ***su*** *ki* *nafsan,* *go*
1SG.PRF=PRF call-TS-3PL.OBJ PFV and 1SG.PRF=PRF talk-TS-3PL.OBJ PFV PREP language and
ru=pe *tao* *nafsan faum* ***su,*** *go* ***kai=pe*** *paktof-i-r.*
3PL=PRF give.me word new PFV and 1SG.PRF=PRF pay-TS-3PL.OBJ
I called the people, I talked to them, they gave me new words, and I paid them. (AK1-116-01)

(45) ***A=pe*** *sos-o-r* ***su,*** ***a=pe*** *pestaf-i-r* ***su*** *ki* *nafsan,* ***ru=pe*** *tao*
1SG=PRF call-TS-3PL.OBJ PFV 1SG=PRF talk-TS-3PL.OBJ PFV PREP language 3PL=PRF give.me
nafsan faum ***su,*** ***kai=pe*** *paktof-i-r.*
word new PFV 1SG.PRF=PRF pay-TS-3PL.OBJ
I called the people, I talked to them, they gave me new words, and I paid them. (AK1-116-01)

(10) [AGR] (AK1-116-01) [Do you know what happened to my brother yesterday? I saw it myself.] We WALK in the forest. Suddenly he STEP on a snake. It BITE him in the leg. He TAKE a stone and THROW (it) at the snake. It DIE.

(46) *Komam ra=siwer namlas nanom me i=na i=to i=kam m̃at i=skei, m̃at i=trau kat natu-e-n. I=wes faat i=skei, i=trau p̃kapni m̃at ki.*

[NEW1] PE changes the meaning in the same way as in (9ex).

(11) [AGR] (AK1-118-01) [Do you know what happened to me once when I was a child? (Note: The speaker was, however, old enough to remember the incident.)] I WALK in the forest. Suddenly I STEP on a snake. It BITE me in the leg. I TAKE a stone and THROW (it) at the snake. It DIE.

(47) *A=pato sari namlas, me akam m̃at i=skei, i=kat natu-o-k, i=kat natu-o-k teflan, a=wes faat trau p̃kapn-i.*

(12) [POSS] [AGR] (AK1-118-01) [This happened to me just an hour ago.] I SIT under a tree, when an apple FALL on my head. (Or, if more natural: While I SIT under a tree, an apple FALL on my head.)

(48) *Kineu a=sak to etan nkas to kia malnen "apple" i=m̃el tik np̃au-k.*

(49) *Kineu a=sak to etan nkas to kia malnen "apple" i=m̃el me i=mp̃afu np̃au-k.*
I was sitting under a tree when an apple fell on my head and made it bleed.

(50) *kineu kai=pe sak to etan nkas to kia malnen "apple" i=m̃el tik np̃au-k.*

(51) *kineu kai=pe sak to etan nkas to kia malnen "apple"* ****ki=pe*** *m̃el tik np̃au-k.*

(52) *Kineu a=sak to etan nkas to kia me (*malnen) "apple" i=po m̃el.*

(13) [POSS] [AGR] (AK1-118-01) [Do you know what happened to me once when I was a child? (Note: The speaker was, however, old enough to remember the incident.)] I SIT under a tree, when an apple FALL on my head. (Or, if more natural: When I SIT under a tree, an apple FALL on my head.)

(53) *A=sak to etan nkas to malnen "apple" i=m̃el tik np̃au-k.*

(14) [AGR] (AK1-119-01) [It is morning. A wakes up, looks out of the window and sees that the courtyard (or the street) is wet.] A: It RAIN during the night.

(54) *Uus i=wo nanom p̃og.*
It already rained at night.

(14ex1) [NEW1] [NEW2] expectation but not earlier than expected [You waited for the rain yesterday, it didn't come and today you wake up but the rain has gone.]

(55) *Uus ki=pe wo nanom p̃og.*

(56) *Uus i=po wo nanom p̃og.*

(14ex2) [NEW1] [It rained, and it stopped and you refer back to the rain.]

(57) *Uus ki=pe wo su.*

(14ex3) [NEW1] [You are trying to make something before the rain comes, but suddenly the rain catches up with you, and you say:]

(58) *Oh, uus ki=pe to wo.*

(59) *uus ki=pe to wo kia me a=fiit sil*
The rain started and I ran inside.

(14ex4) [NEW1]

(60) *kai=pe to eñrom to kia me uus i=po to wo.*
I was inside and then the rain started.

(14ex5) [NEW2] [Someone comes and says: oh, it's raining. And you say:]

(61) *Uus i=po wo kia.*
It has just started raining.

(62) *Uus i=po wo malfanen kia.*
It has just started raining.

(15) [AGR] experiential-not iterative (AK1-119-01) [Question: You MEET my sister (at any time in your life up to now)?] Answer: Yes, I MEET her several times.

(63) *ore, a=paatlas-i-ø mal sikskei.*

(64) **kai=pe paatlas-i-ø mal sikskei.*

(15ex1) [NEW1]

(65) *kai=pe paatlas-i-ø.*
I met her (once).

(16) [AGR] (AK1-119-01) [A question asked at 9 o'clock A.M.: Why do you look so tired?] Answer: I WAKE UP at 4 o'clock this morning (or: today).

(66) *a=pilo 4 oklok p̃ulp̃og*

(16ex1) [NEW1] [If your alarm is set for 5am, but by chance you wake up before time, at 4am.]

(67) *Kai=pe pilo 4 oklok p̃ulp̃og.*

(68) *A=pe pilo 4 oklok p̃ulp̃og.*

(69) *kai=pe pilo kin me i=po pi 5.*

(70) *a=pe pilo 4, me i=po pi 5.*

(16ex2) [NEW2] [If you are supposed to wake up at 3am and then you wake up at 4am.]

(71) *a=po pilo 4 oklok põulpõog.*

(17) [AGR] (AK1-119-01) [A question asked at 3 o'clock P.M.: Why do you look so tired?] Answer: I WAKE UP at 4 o'clock today.

the same as (16)

(18) [AGR] (AK1-119-01) [A question asked at 9 o'clock A.M.: Why do you look so tired?] Answer: I NOT SLEEP well during the night.

(72) *a=ta matur wi põog mau.*

(73) *a=matur saa põog.*

(18ex) [NEW1] [If you were expecting to sleep well at night yesterday, but you didn't.]

(74) *nanom na wan kai=pe ta matur wi põog mau.*

(19) [AGR] (AK1-119-01) [A question asked at 3 o'clock P.M.: Why do you look so tired?] Answer: I NOT SLEEP well during the night.

the same as (18)

(20) [POSS] (AK1-119-01) [A has got his wages and says:] I GET my wages today, so I can now BUY you a beer.

Note: In elicitation I said 'I already got my wages' prompting the use of P.

(75) *Kai=pe wes naul mees kin go ka=fo tae gaag paakot "beer" wanki.*
I got my wages today so now I can buy you a beer.

(76) *A=pe wes naul mees kin go ka=fo tae gaag paakot "beer" wanki.*
I got my wages today so now I can buy you a beer.

(77) *A=wes naul mees kin go ka=fo tae gaag paakot "beer" wanki.*
I got my wages today so now I can buy you a beer.

(21) [POSS] (AK1-119-01) I GET my wages yesterday, so I can now BUY you a beer.

(78) *A=wes nfakoton neu nanom, malfane ka=fo tae gaag paakot "beer".*

(79) *A=wes nfakoton neu nanom, malfane* ****a=tae*** *gaag paakot "beer".*

(80) *Kai=pe wes naul neu nanom kin go ka=fo tae gaag paakot "beer".*

(22) [AGR] (AK1-119-01) [Note: These sentences do not necessarily imply the passive voice though BE BORN happens to be formally a passive in English. Treat it as a single lexical unit.] A: When

you BE BORN? - B: I BE BORN on the first of June 1950.

(81) *Ku=paakor ngas?*

(82) *Ngas kin kupaakor wes?*

(83) **Ku=pe paakor ngas?*

(84) *a=paakor naliati i=pei ni atlag ni June ntau 1950.*

(85) **kai=pe paakor naliati i=pei ni atlag ni June ntau 1950.*

(22ex) [NEW1] [The cyclone Pam came in 2015, and I was already born at that time.]

(86) *kai=pe paakor su me i=po mai.*
I was born before it came./ I was already born and then it came.

(23) [POSS] (AK1-120-01) [A guide presenting his home town to tourists. Note: This sentence does not necessarily imply the passive voice, unless it really is the most natural way of expressing this sentence in L.] Our town BE FOUNDED in 1550.

(87) *em̃lel nim̃am rukoi=nrikakin 1550.*
building our 3pl.prf=build.up in 1550

(88) *em̃lel nim̃am rukoi=pe nrikakin 1550.*
building our 3pl.prf=prf build.up in 1550

(89) *ntau ni 1550, ru=tfag "town" nigmam.*
year of 1550 3pl=build town our

(90) *ntau na ru=pe tfag "town" nigmam.*
year that 3pl=prf build town our

(23ex) [NEW2] [If they plan to do it before 1550, but they didn't do it when they were supposed to do, and they build it only in 1550]

(91) *ru=po nrikakin 1550.*
3pl=psp.real build 1550

(24) [AGR] (AK1-120-01) [Question: Do you know what remarkable event TAKE PLACE in 1550? Note: as in 23.] Answer: In that year, our town BE FOUNDED.

(92) *ag ku=tae nafte kin i=paakor 1550?*

(93) *Me ntau wan kia ru=nrikaki "town" nigmam.*

(94) *Me ntau wan kia ru=tfag "town" nigmam.*

(95) *1550 nen kin ipi ntau natfagien nig em̃lel nigmam.*
1550 is the year of building of our town./ It was in 1550 that our town was built.

(96) **Me ntau wan kia ru=pe tfag "town" nigmam.*

(97) *Ntau na kin ru=tfag "town" nigmam.*

(98) **Ntau na kin ru=pe tfag "town" nigmam.*

(99) *Ntau na rukoi=tfag "town" nigmam.*

(25) [AGR] (AK1-120-01) [Question: When Columbus ARRIVE at America for the first time?] Answer: He ARRIVE at America in 1492.

(100) *Columbus i=pei pan taasak America ngas?*
Columbus 3sg=first go come.ashore America when

(101) *Ngas kin i=pi malpei nen Columbus i=taasak America?*
when rel 3sg=be before rel Columbus 3sg=come.ashore America

(102) *me kin nlaun nig America, ngas kin i=pi mal pei nen Columbus i=taasak wes?*

(103) *I=taasak America ntau 1492.*

(104) *I=pan taasak-wes 1492.*

(105) *Columbus ki=taasak America ntau ni 1492.*

(25ex) [NEW1] [A says: I think Columbus came to America in 1700s.] B says: No, Columbus had already come in 1492.

(106) *Columbus ki=pe pan taasak-wes 1492.*

(26) [NO] (AK1-120-01) [Question: What do you know about this novel? Note: This sentence does not necessarily imply the active voice or the word order given here if it is not natural in L.] Answer: Graham Greene WRITE it.

(107) *ku=tae tenmatuun tokloos natus ne?*
What do you know about this novel?

(108) *ag ku=nrus tae tenamruun tokloos natus ne?*
What do you know anything about this novel?

(109) *Graham Greene kin i=mtr-i/kia i=mtr-i.*
Graham Greene was the one who wrote it.

(110) *Graham Greene kin i=mtr-i.*
Graham Greene is the one who wrote it.

(111) *Graham Greene go i=mtr-i.*
Graham Greene wrote it (that book over there).

(27) [ON] (AK1-120-01) [Question: Your sister still BE at home?] Answer: No, she already GO AWAY.

(112) *Korem ke=fo ta to esum̃ to ko?*

(113) *I=tik, ki=pe tm̃alu.*

(28) [NO] [PS] (AK1-120-01) [B's sister is known to have gone to another town. Question: A: Your sister COME BACK? (Note: a free translation may be needed for B's answer.)] B: No, she still GO AWAY.

Perfect obligatory in the positive question, not attested in the negative answer.

(114) *Korem ki=pe to Ostrelia ler mai?*

(115) *Korem ki=pe ler to Ostrelia ler mai?*

(116) *Korem ki=pe ler to Ostrelia mai?*

(117) *korem ki=pe to Ostrelia ler mai?*

(118) *korem ki=pe ler mai?*

(119) *i=ta tik, i=tap ler mai mau.*
not yet, she hasn't come back.

(120) *i=ta tik, i=ta puel.*
not yet, she is still away.

(121) *i=ta pato Melbourne.*
she is still in Melbourne.

(122) *i=ta ta pato Melbourne ler mai mau.*
she has not returned from Melbourne yet.

(29) [NO] [PS] (AK1-120-01) [As in 28. Question: Your sister COME BACK?] Answer: No, she NOT COME BACK yet.

(123) *Korem ki=pe ler mai?*

(124) *Korem ki=pe ler?*

[NEW2] [If she was expected to return yesterday and you ask the question today assuming that she has already arrived:]

(125) *Korem i=po ler?*

(126) *I=tik, i=ta tap ler mai mau.*

(127) *I=tik, i=ta puel.*

P is dispreffered with negation: there are only 3 instances of negated perfect in the corpus)

(30) [ON] (AK1-120-01) [A: Don't talk so loud! You'll wake the baby.] B: He WAKE UP already.

(128) *P̃a=ta krakpes mau, p̃a=fo pug tes, p̃a=fo pug tauses.*

(129) *Ga ki=pe pilo.*

(130) *ga i=to matur, me ga ki=pe pilo.*
he was asleep, but already woke up.

(131) *ga i=pe pilo.*

(31) [ON] [The baby wakes up one hour earlier than expected and starts screaming. Mother (in another room):] Oh, no! He WAKE UP already! P is typically translated as 'already' in English, so any sentence with it would always prompt P

(132) *ga ki=pe pilo.*

(133) *ga ki=pe pilo su.*

(32) [POSS] (AK1-120-01) [Note: use BE or VISIT, or some other predicate, according to what sounds the most natural in L.] You BE to (VISIT) Australia (ever in your life)?

(134) *Kui=pe nrus pak Ostrelia naɱ̃olien gaag?*

(135) *kui=pe nrus pak Ostrelia tete mal naɱ̃olien gaag?*

(136) *kui=pe nrus pak Ostrelia tete mal?*

(137) *ku=nrus pak Ostrelia tete mal?*

(138) *ku=nrus pak Ostrelia tete mal ko?*

(139) *ku=pak Ostrelia tete mal?*

(140) *ku=nrus pak Ostrelia ko?*

(141) *ku=nrus pan ko?*

(33) (AK1-120-01) [These are alternative answers to 32. They should all be translated.]
(33.1) [NO] [PS] No, I never BE (VISIT) there.

(142) *i=tik, a=ta(p) pak nrog-o-ø mau.*

(33.2) [ON] Yes, I BE (VISIT) there.

(143) *ore, kai=pe pa.*

(33.3) [ON] Yes, I BE (VISIT) there several times.

(144) *ore, kai=pe to nrus pan tete mal.*
I went there several times.

(33.4) [NO] Yes, I BE (VISIT) there in January 1987.

(145) *ore, a=pan sari sago i=pen atlag ni Ĵanuary 1987.*
yes, I went there in January 1987.

(34) [POSS] (AK1-120-01) [A has been talking about the way of life in Australia. Note: the sentence construction may have to be changed - even in English.] B: You BE to (VISIT) Australia as you know all that? - A: Yes, I BE (VISIT) there, so I know.

(146) *Ag ku=pak Ostralia kin ku=po tae naṁolien ni sago i=pen?*

(147) *Ag kui=pe pan kin go ku=po tae naṁolien ni sago i=pen?*

(148) *ag kui=pe pak Ostrelia kin go ku=po tae naṁolien ni sago i=pen?*

(149) *Ore, kai=pe pan su gawankin a=po tae.*

(35) [OBL] ( ) [Question: You MEET my sister (at any time in your life up to now)? Note: All these alternative answers should be translated.]

(150) *(ag) ku=pe paatlas kor-e-k te mal/nrak ko?*

(151) *(ag) kui=pe paatlas kor-e-k te mal/nrak ko?*

(152) *(ag)* ****ku=paatlas*** *kor-e-k te mal/nrak ko?*

(153) *(ag) ku=pe nrus paatlas kor-e-k ko?*

(154) *(ag) ku=pe nrus paatlas kor-e-k tete mal ko?*

(35.1) [NO] [PS] No, I never MEET her.

(155) *Itik, a=tap paatlas nrog-o-ø tete mal/nrak mau.*
No, I have never met her.

(35.2) [POSS] [QS] Yes, I MEET her once.

(156) *Ore, a=paatlas-i-ø mal i=skei.*
Yes, I met her once.

(157) *Ore, kai=pe paatlas-i-ø mal i=skei.*
Yes, I already met her once.

Missing: Yes, I MEET her in January 1987.

(35ex) [NEW2] [If you are planning to meet my sister and then you confirm you did meet her according to the plan.]

(158) *Ore, a=po paatlas-i-ø.*

(36) [POSS] [QS] (AK1-123-01) [A has been talking to about C's personal tastes. Note: the sentence construction may have to be changed - even in English.] B: You MEET her (sometime) as you know all that? - A: Yes, I MEET her, so I know.

(159) *ag ku=pe pei paatlas-i-ø tete mal/ nrak?*

(160) *Ku=trau tae wi kin.*
You seem to know her very well.

(161) *me kin ag ku=trau tae wi kin tefla, i=ku, ag ku=pe paatlas-i-ø tete nrak?*
You seem to know her very well, what, have you ever met her?

(162) *ag ku=paatlas-i-ø kin ku=tae?/ ag ku=paatlas-i-ø kin ku=po tae?* is that because you know her (that you know her so well)? (you met her first and then you know her)

(163) *a=paatlas-i-ø kin a=po tae.*
I met her, that's why I know her.

(164) *Kai=pe patlasi kin a=po tae.*
I already met her, that's why I know her.

(165) *A=paatlas-i-ø gawankin a=tae.*
I met her, that's why I know her.

(166) *Kai=pe paatlas-i-ø gawankin a=po tae.*
I already met her, that's why I know her.

(167) *a=tae nlaken a=paatlas-i-ø.*
I know her because I met her.

(168) *A=tae nlaken kai=pe paatlas-i-ø.*
I know her because I have met her.

(37) [AGR] (AK1-123-01) [It is cold in the room. The window is closed.] Question: You OPEN the window (and closed it again)?

(169) *ag ku=p̃elgat nmetklas mer p̃not-i?*
you 2sg=open window again close-3.obj
Did you open the window and closed it again?

[if the window is closed while you are speaking]

(170) *ag ku=p̃elgat nmetklaas?*
Did you open the window (in the meanwhile)?

(37ex1) [NEW1] [You tell someone to open the window, and then you want to check if your order has been done.]

(171) *ag ku=pe p̃elgat nmetklas?* (Implication: the window is still open at the time of speaking.)

The P event does not have to hold at the uttenrance time. (37ex2) [NEW1] [Rosey came back to the village as expected, but she returned home in the meanwhile.]

(172) *ki=pe ler mai me i=mer ler pa.*
She came and she returned.

(38) [NO] (AK1-123-01) [This is an answer to 37.] Yes, I OPEN it.

(173) *Ore, a=p̃elgat-i.*

(39) [NO] (AK1-123-01) [This is an answer to 37.] No, I NOT OPEN it.

(174) *i=tik a=tap p̃elgat nrog-o-ø mau.*

(175) *i=tik, a=tap p̃elgati mau.*

(40) [NO] (AK1-123-01) [The window is open but A has not noticed that. A asks B: why is it so cold in the room?] B: I OPEN the window.

(176) *nlaken iku kin em̃rom i=mlanr tefla?*
Why is it so cold inside?

(177) *kineu kia a=p̃elgat nmetklaas.*

(178) *Em̃rom san* (the place were we are)/*sas* (the place where I am) *i=mlanr nlaken a=p̃elgat nmetklaas.*

(41) [OBL] [POSS] (AK1-123-01) [Question: Is your sister still abroad?] Answer: No, she COME BACK and is now staying with us.

(179) *kor-e-m i=tap pato etog?*

(180) *i=tik, ki=pe ler mai go i=skot komam to malfaane.*
She already came back and she is with us now.

(181) *ki=pe ler mai, ga kin ki=pe skot mam to malfane.*

(182) *ki=pe ler mai, ga kin ki=skot mam to.*

(42) [OBL] [POSS] [QS] (AK1-123-01) [Question: I was told you are writing a book. How many pages you WRITE by now?] Answer: I WRITE fifty pages.

(183) *ru=nrik wou ki na ku=to mtir natus i=skei. Malfaane kui=pe mtir naf̃elgan i=pi ki?*
They told me you were writing a book, how many pages have you written by now?

(184) *a=nrog-o-ø na ku=to mtir natu i=skei, kui=pe to mtir naf̃elgan kaafi malfaane?*
I heard that you were writing a book, what page are you writing now?

(185) *ru=nrik kineu kin na ku=to mtir natus i=skei, kui=pe to naf̃elgan kaafi ki?*

They told me you were writing a book, what page are you on?

(186) *ru=nrik kineu kin na ku=to mtir natus i=skei, kui=to naɸelgan kaafi ki?*
They told me you were writing a book, what page are you on?

(187) *a=nrog-o-ø na ku=to mtir natu i=skei, kui=pe to naɸelgan kaafi malfaane?*

(188) *A=mtir naɸelgan 50.*
I wrote fifty pages.

(189) *A=to mtir naɸelgan 50 ki.*
I'm writing the fiftieth page.

(190) *A=to naɸelgan 50 ki.*
I'm on the fiftieth page.

(191) *Kai=pe to naɸelgan 50 malfaane/ malfaane kai=pe to naɸelgan 50.*
I'm on the fiftieth page now.

(192) *A=tap tae naɸelgan i=pi kin a=mtr-i mau.*
I don't know how many pages I wrote.

(193) *A=tap tae sef naɸelgan kin a=tkos mau.*
I don't know which page I am on.

(43) [POSS] (AK1-123-01) [Question: I was told you collect dolls. You COLLECT many of them?] Answer: I COLLECT some two hundred dolls by now.

(194) *ru=nrik wou/kineu kin na ku=to kruuk-ki "doll". ku=kruuk-ki telaap?*
Have you collected many?

(195) *a=nrog-o-ø na kuto kruuk-ki "doll"*

(196) *a nrog-o-ø ru=tli na ku=to kruuk-ki m̃em. Ku=kruuk-kir ru=laap?* m̃em (a seed that spins on the wind – napuk is the three on which it grows)

(197) *Malfaane kai=pe lakor (*fla) kruk-ki m̃eltig ki 200.*
Now I have already collected maybe around 200

(198) *kai=pe kruk-ki m̃eltig 200 ki.*

(199) *A=kruuk-kir rui=pe lakor tkal tete naor ni 200 ki.* I collected, they reach somewhere around 200.

(200) *A=kruk-kir pan tkal m̃eltig ki 200 tefla.*
I collected them somewhere up to 200, something like that.

(44) [POSS] (AK1-123-01) [Question: I was told you intend to collect 300 different dolls. How many you already COLLECT?] Answer: I COLLECT some two hundred dolls by now.

(201) *a=nrog-o-ø ru=na ku=to na ɸa=kruuk-ki "doll" fserser i=pi 300, kui=pe kruk-ki i=pi su? / Kui=pe*

kruk-ki kaafi ki?

(202) *Kai=pe to kop m̃eltig ki 200 ki.*
I'm somewhere around 200.

(203) *malfane kai=pe lakor tkal m̃elting ki 200 ki.*
now I already reached somewhere around 200.

(204) *a=to kop 200 ki/ a=to kop 200 tefla.*
I'm somewhere around 200.

(45) [AGR] (AK1-123-01) [Question:I was told you always forget your umbrella somewhere. Is it true?] Answer: Yes, this year I LOSE five umbrellas.

(205) *a=nrog-o-ø na ku=to metp̃aakor suulok gaag sermal/ a=nrog-o-ø na ku=to metp̃aakor suulok ser nrak , i=tilm̃ori?*

(206) *Ore, ntau ne a=krak puel-ki sulok ilim. / a=kraksmanr (miss something by falling down) sulok i=lim.*

(45ex) [NEW1] [You are counting shooting stars with your friends. Who will be the first to count 5 shooting stars?]

(207) *kineu kai=pe fe ki=pe lim.*
I have counted five already.

(208) *Ki=pe lim ru=pa.*
Five have already passed.

(46) [NO] (AK1-124-01) [A is setting out on a long journey in an old car. asks: What if something goes wrong with your car on the way?] A: I BUY spare parts and tools in case something happens (= I have got them now).

(209) *me kin te-namrun ke=fla sa m̃p̃atfat gaag malen ku=to pa?*

(210) *me kin te-namrun ke=fla to sa m̃p̃atfat gaag malen ku=to pa?*

(211) *me i=f-wel kin te namrun ke=fla sa m̃p̃atfat gaag malen ku=to pa?*

(212) *me i=f-wel kin te namrun ke=fla to sa m̃p̃atfat gaag malen ku=to pa?*

(213) *me kin te-nmatun ke=fla sa m̃p̃atfat gaag go selwan ku=to pa?*

(214) *me kin te-nmatun ke=fla to sa m̃p̃atfat gaag go selwan ku=to pa?*

(215) *Me i=f-wel kin te-nmatun ke=fla sa m̃p̃atfat gaag go selwan ku=to pa?*

(216) *Me i=f-wel kin te nmatun ke=fla to sa m̃p̃atfat gaag go selwan ku=to pa?*

(217) *me kin m̃p̃atfat gaag ke=sa nmal napu?*

(218) *Me i=f-wel kin m̃p̃atfat gaag ke=sa nmal napu?*

(219) *me kin m̃p̃atfat gaag ke=fla to sa mmal napu?*

(220) *Me i=f-wel kin m̃p̃atfat gaag ke=fla to sa mmal napu?*

(221) *me m̃p̃atfat gaag kin ke=fla to sa malnen ku=to pa?*

(222) *me m̃p̃atfat gaag kin ke=fla to sa selwan ku=to pa?*

(223) *me m̃p̃atfat gaag kin ke=fla to sa nmal napu?*

(224) *A=paakot p̃al-ki tete nfasuen go tete sernale nawesien knen m̃as i=to, ke=fla to piatlak tete namrun ke=sok ki m̃p̃afat ne nmal napu.*

(225) *Ke=fla to pitlak tete namrun ke=sok-ki m̃p̃atfat ne, tete nfaswen go snale nawesien knen kis a=paaktofir ru=tok.*

(226) *tete namrun ke=fla sok-ki m̃p̃atfat ne, tete nfaswen go snale nawesien knen kis a=paaktofir ru=tok.*

(227) *Tete nfasuen go sernale naesien knewn kis a=slat p̃al-kir to, tu=fla to selsaa-wes napu.*

(47) [POSS] (AK1-124-01) [Question: Why do you look so tired? (Note: you may replace "three days" by "three nights" or whatever seems most natural.)] Answer: I NOT SLEEP for three days.

(228) *Ag ku=ku kin ku=lee-ki nmaoswen to?*

(229) *a=lek-a-ø wel ku=maos, i=ku? / a=lek-a-ø wel ku=maos. / ku=maos nlaken i=ku? / (ag) ku=maos nafte togo?*

(230) *a=ta matur p̃og i=tool mau.*

(231) *kai=pe ta matur p̃og i=tool mau toki.*

(232) *p̃og i=tool a=trau ta matur mau.*

(48) [ON] (AK1-125-01) [She is still watching television! How long she DO that?] Answer: She WATCH (it) for three hours.

(233) *i=ta to maag TV, i=pees mag wes sefmal?/ i=ta to maag TV, i=pe mag-wes malpram? / i=ta to maag TV go/ki? Ku=lek-a-ø i=pees-wes sefmal?*

(234) *ki=pe to kop(awer- hour) kaatol ki.*

(235) *ki=pe nrus pi mal pram ki. /ki=pe nrus pi mal wa. /Ki=pe lakor nrus pi mal pram ki.*

(236) *ki=pe to kop "hour" i=tool ki.*

(49) [ON] (AK1-125-01) [A is still living in this town.] A: I LIVE here for seven years.

(237) *kai=pe tok esaan to ntau i=laru.*

(238) *kineu kai=pe tok esaan to ntau i=laru.*

(239) *kineu kai=pe tok esaan to ntau i=laru ki.*

(240) *kineu kai=pe tok esaan to m̃eltig ki ntau i=laru ki.*

(241) *ki=pe to kop ntau i=laru kin a=tok esaan to.*

(242) *Ki=pe to kop m̃eltig kin tau i=laru kin a=tok esaan to.*

(243) *m̃eltig kin tau i=laru kin a=tok esaan to.*

(50) [POSS] (AK1-125-01) [A is still living in this town. As in 49, the intended meaning of LIVE is 'to dwell somewhere', not 'to spend one's life'.] A: I LIVE here all my life.

(244) *tok esaam to mal nam̃olien neu.*

(245) *kai=pe to saan to mal nam̃olien neu.*

(246) *Mal nam̃olien neu ga a=tu saan m̃as tu.*

(247) *Mal nam̃olien neu i=mau wi, a=tu saan m̃as tu.*

(50ex) [NEW1] [If I use to live somewhere else before I came to live here up until now, example, serving life sentence in jail.]

(248) *mal nam̃olien neu ga kai=pe to saan m̃as to.*

(51) [POSS] (AK1-125-01) [A is visiting a town she used to live in several years ago; now she lives somewhere else.] A: I LIVE here, so I know every street here.

(249) *kineu a=pei to esaan go a=tae wi ki ser napu sesereik ni san.*

(250) *kineu a=pei to esaan go a=tae wi ki siilu napu sesereik no san.*

(251) *kineu a=tok esaan teetuei/ malpei go a=tae wi ki ser napu seseerik ni sa.*

(252) *kineu a=tok esaan teetuei/ malpei go a=tae wi ki siilu napu seseerik ni sa.*

(253) *kineu kai=pe pei tok esan gawankin a=tae ser/ siilu napu seseerik ni san.*

(52) [NO] (AK1-125-01) [As in 51. A now lives somewhere else!] A: I LIVE here for seven years, so I know every street here.

(254) *kineu a=pei tok esaan to ntau i=laru go a=tae wi ki ser napu ni sa.*

(255) *kineu a=pei tok esaan to ntau i=laru gawan kin a=tae wi ki ser napu ni sa.*

(256) *kineu a=pei mai tok esaan to ntau i=laru go/ gawankin a=tae wi ki ser napu ni sa.*

(53) [POSS] (AK1-126-01 mentioned as 54) [As in 51 and 52.] A: I LIVE here for seven years, but then I had to move away.

(257) *kineu a=pei tok esan ntau i=laru me a=to mer tm̃alu.*

(258) *kineu kai=pe pei tok esa tok ntau i=laru me a=to kai mer tm̃alu.*

(54) [NO] (AK1-125-01 mentioned as 53) [The speaker meets his friend about once a week; "the film" refers to a different film each time:] Every time I MEET him, he TELL me about the film he (just) SEE.

(259) *ser nrak nen ka lek-a-ø ,ke=fo neu traus film nen i=po lek-a-ø su.*

(260) *ser mal nen ka lek-a-ø ,ke=fo neu traus film nen i=po lek-a-ø su.*

(261) *ser nrak/mal nen ka=lek-a-ø ,ke=fo neu traus film nen i=po lek silwa su.*

(262) *ser nrak/mal nen ka=lek-a-ø ,ke=fo neu traus film nen i=po lek-a-ø i=nrus pi malfaa.*

(263) *ser nrak/mal nen ka=lek-a-ø ,ke=fo to neu traus film nen i=po lek-a-ø su.*

(264) *ser nrak/mal nen ka=lek-a-ø ,ke=fo to mur ke=neu traus film nen i=po lek-a-ø su.*

(265) *ser nrak/mal nen ka=lek-a-ø ,ke=fo to mur-i-n na ke=neu traus film nen i=po lek-a-ø su.*

(55) [ON] (AK1-126-01) [A has just seen the king arrive and reports it to B, who knows that the king has been expected to visit their town but does not know that he has now actually arrived.] A: The king ARRIVE!

(266) *naot/ maarik kia ki=pe mai.*

(267) *naot/maarik go ki=pe mai.*

(268) *naot/ maarik kis ki=pe mai.*

(56) [NO] (AK1-126-01) [A has just seen the king arrive. The event is totally unexpected.] A: The king ARRIVE!

(269) *maarik kis i=mai.*

(270) *maarik kis i=to mai.*

(57) [POSS] (AK1-126-01) [Telling what a baby just DO. "N" should be replaced with a girl's name.] N just SAY her first word!

(271) *N i=po til nafsan pei ga.*

(272) *N kia i=po til nafsan pei ga malfane.*

(273) *N ki=pe til nafsan pei ga.*

(58) [POSS] (AK1-126-01) [A comes from the kitchen very agitated and tells what he has just seen happen:] A: The dog EAT our cake!

(274) *kori kia i=paam "cake" gakit.*

(275) *kori i=paam "cake" gakit.*

(276) *kori kia ki=pe paam "cake" gakit.*

(59) [NO] (AK1-126-01) [A comes from the kitchen where he has just seen the sad remains of the cake. He tells what he assumes to have happened:] A: The dog EAT our cake!

(277) *kori i=lakor paam cake gakit.*

(278) *kori kia i=lakor paam cake gakit.*

(60) [AGR] (AK1-126-01) [Do you know what happened to my brother yesterday? I did not see it, but he told me.] He WALK in the forest. Suddenly he STEP on a snake. It BITE him in the leg. He TAKE a stone and THROW (it) at the snake. It DIE.

(279) *ku=tae nafte kin p̃aluk i=sua nanom?*

(280) *ag ku=tae nafte?*

(281) *P̃aluk i=nrik wou kin na i=pan nraf pan trau kam m̃at. m̃at nen i=kat natwen teflaan i=wes faat iskei trau p̃kapun m̃at ne.*

(282) *Tai i=nrik kineu kin na i=pa sari namlas nanom me i=kam m̃at i=skei me m̃at nen i=kat natu-e-n me i=na i=to i=wes faat i=skei trau p̃kapun m̃at nen ki.*

(61) [NO] (AK1-126-01) [This is the beginning of a story (tale). "Once upon a time" should be replaced with the formula stories typically begin with in L.] Once upon a time there was a man. He WALK in the forest. Suddenly he STEP on a snake. It BITE him in the leg. He TAKE a stone and THROW (it) at the snake. It DIE.

(283) *Nrak i=skei, i=piatlak natam̃ol i=skei. i=pato nraf ur namlas pan me i=kam m̃at iskei. m̃at nen i=na i=to trau kat natu-e-n. i=kat natu-e-n teflan go natam̃ol ne i=nrau faat i=skei trau p̃kapun m̃at nen ki.*

(284) *Nrak i=skei, i=pitlak natam̃ol i=skei. i=pato nraf ur namlas pan me i=trau kam m̃at iskei. i=kam m̃at nen teflaan go m̃at nen i=na i=to trau kat netu-e-n. i=kat natwen teflan go naat nen ki nwes faat i=skei trau p̃kapun m̃at nen.*

(62) [NO] (AK1-126-01) [A tells what she has heard from her father. Nothing shows that she would not believe it.] A: When my father BE a child, schools BE better than nowadays.

(285) *mal nen apaap neu i=ta pi teesa, nafet "skul" ru=trau wi tol mes.*

(286) *mal nafitesawen ni apaap neu mana, nafet "skul" ru=mer wi tol mes.*

(63) [NO] (AK1-126-01) [A tells what she has heard from her father. Nothing shows that

she would not believe it.] A: My father TELL me that when he BE a child, schools BE better than nowadays.

(287) *apaap neu i=nrik wou kin na malen i=ta pi teesa, i=na nafet "skul" ru=mer wi tol mes.*

(288) *apaap neu i=nrik wou kin na malen ga i=tapi teesa sees, i=na nafet "skul" ru=mer wi tol mes.*

(64) [NO] (AK1-127-01) [A tells what she has heard people saying. Nothing shows that she would not believe it, but she does not present this as her own opinion. Add words if needed!] A: Sixty years ago schools BE better than nowadays.

[NEW1]

(289) *a=nrog-o-ø ru=na ntau raalim i=lates na i=pe nom pa, nafet "skul" ru=trau wi tol mes*

(290) *a=nrog-o-ø ru=na ntau raalim i=lates na i=pe nom pa, nafet "skul" ru=mer wi tol mes*

(65) [NO] (AK1-127-01) [A doubts what her father has told her.] My father CLAIM that when he BE a child, schools BE better than nowadays.

(291) *apaap neu i=tli na malen i=ta pi teesa, nafet "skul" ru=mer wi tol mes.*

(292) *apaap neu i=to tli na malen i=ta pi teesa, nafet "skul" ru=mer wi top tol mes.*

(66) [NO] (AK1-127-01) [A does not believe what she has heard from her father; she only reports what he has told her.] A: When my father BE a child, schools BE better than nowadays.

(293) *apaap neu i=na malen ga i=ta pi teesa, i=na nafet "skul" ru=mer wi tol mes.*

(67) [POSS] (AK1-127-01) [Said by a person who has just heard about the event but has not seen it.] The king ARRIVE!

(294) *ru=na maarik ki=pe mai*

(295) *a=nrog-o-ø ru=na maarik i=mai.*

(296) *ru=na maarik i=mai.*

(297) *a=nrog-o-ø ru=na maarik ki=pe mai.*

(68) [POSS] (AK1-127-01) [As in 67.] My sister just TELL me that the king ARRIVE.

(298) *kor-e-k ina maarik ki=pe mai*

(299) *a=nrog kor-e-k i=na maarik i=mai.*

(300) *kor-e-k i=na maarik i=mai.*

(301) *a=nrog kor-e-k i=na maarik ki=pe mai.*

(69) [NO] (AK1-127-01) [Investigating a burglary, seeing footprints beneath a window:] The

thief ENTER the house by this window.

(302) *natam̃ol pnak i=ur nmetklas nen sil*

(303) *nmetklas nen kin natam̃ol pnak i=urees sil.*

(70) [ON] (AK1-132-01) [A and are not in the room in which B's son has been doing his homework. Question: A: Is your son still doing his homework?] B: No, (I think) he FINISH (it) by now (or: already).

(304) *teesa gaag i=ta tok preg nawesien ga go?*

(305) *i=tik, a=mro kin ki=pe lakor paap̃not nawesien ga toki*

(306) *i=tik, a=mro kin malfaane ki=pe lakor paap̃not nawesien ga toki*

(71) [NO] (AK1-132-01) [An archaeologist, having investigated an excavation site, says:] This BE a huge city.

(307) *esaan i=lakor pei pi tete natkoon p̃ur toki.*

(308) *esaas kis i=to itrau wel tete natkon p̃ur p̃rakot.*

(309) *esaas i=pi natkon p̃ur p̃rakot.*

Kipe only when you are talking about a place where you live – present time.

(72) [POSS] (AK1-132-01) [An archaeologist, having investigated an excavation site, says:] This city BE DESTROYED about three thousands years ago.

[NEW1]

(310) *natkoon p̃ur ne ru=lakor pu pri ntau p̃oon i=tol ki=pe nom.*

(311) *natkoon p̃ur ne rukoi=pe lakor p̃ka pri ntau p̃oon i=tol ki=pe nom.*

(73) [NO] (AK1-132-01) [A guide, showing ruins to tourists:] This BE a huge city.

(312) *esaan ga i=pi natkoon p̃ur i=skei teetwei.*

(313) *esaan ga i=pei pi natkoon p̃ur i=skei teetwei.*

(74) [NO] (AK1-132-01) [A guide, showing ruins to tourists:] This city BE DESTROYED about three thousands years ago.

(314) *natkoon nen, ru=p̃ka presi ntau p̃oon i=tol kipe nom.*

(75) [NO] anteriority (AK1-132-01) [A's sister finished writing two letters just before A came home. A tells:] When I COME home yesterday, my sister WRITE two letters.

(315) *malen a=mai pak esum nanom go kor-e-k me i=mtir silu natus inru.*

(316) *kor-e-k i=po to mtir silu natus i=nru malen a=tkal esum̃.*

(317) *kineu a=po na a=mai tkal esum̃ nanom m̃as go kor-e-k me i=mtir silu natus i=nru.*

(318) *kineu a=po mai tkal esum̃ nanom m̃as go kor-e-k me i=mtir silu natus i=nru.*

(319) *nanom kor-e-k i=mtir silu natus i=nru malen a=mai tkal esum̃.*

(76) [ON] [A's sister was not at home when A arrived. Question: Did you find your sister at home? A answers:] No, I did not (find her). She LEAVE.

(320) *ku=pak esum̃ pan po nrus lek/ lemis kor-e-m na ko?*

(321) *ku=po lek/ lemis kor-e-m na esum̃?*

(322) *ku=pan po lek-a-ø/ lemsi?*
Did you go see her?

(323) *i=tik, a=tap lemis kor-e-k na mau, ki=pe pei tm̃alu.*

(324) *a=pan me a=tap lek-a-ø mau, ki=pe tm̃alu.*

(77) [ON] (AK1-132-01) [A meets B's sister. Later A moves to the town where and B's sister live. Still later, asks A: When you came to this town a year ago, did you know my sister? A answers:] Yes, I MEET her.

(325) *malen ku=mai pak "town" nen ntau na i=pa, ag ku=pe pei tae kor-e-k?*

(326) *Ore, kai=pe pei paatlas-i-ø.*

(327) *Ora, kineu kai=pe pei paatlas-i-ø.*

(78) [ON] (AK1-132-01) [Question: Why did you believe what she told you about Paris? Note: use BE or VISIT or whatever is most natural in L.] Answer: I BELIEVE her, because she BE to (VISIT) Paris.

(328) *nlaken i=ku kin ku=sraleesok natrauswen ga ni Paris na i=to gaag traus-i-ø?*

(329) *ore a=seralaasokos nlaken ga ki=pe pak Paris.*

(330) *ore a=seralaasokos nlaken ga ki=pe pei pak Paris tete mal.*

(331) *ore a=seralaasokos nlaken ga ki=pe to pak Paris mal laap.*

(79) [NO] (AK1-132-01) [The speaker used to meet his friend once a week, but nowadays he does not see him at all. "The film" refers to a different film each time:] Every time I MEET him in those years, he TELL me about the film he just SEE.

(332) *mal sikskei nen a=to paatlas-i-ø, i=to neu pusrek ki fim nen i=po lek-a-ø su.*

(333) *a=to paatlas-i-ø mal sikskei. Me sernrak nen ka=faatlsi, ke=fo to neu pusrek ki film nen i=po to*

lek-a-ø inrus pi malfaa.

(80) [NO] (AK1-132-01) [Looking at a house.] Who BUILD this house?

(334) *fei kia i=tfag nasum̃ ne?*

(335) *fei kin i=tfag nasum̃ ne?*

(336) *fei kia i=preg nasum̃ ne?*

(337) *fei kin i=preg nasum̃ ne?*

(81) [NO] (AK1-132-01) [Looking at a picture of a house which has been torn down.] Who BUILD this house?

(338) *fei mana kin ru=tfag nasum̃ ne?*

(82) [NO] (AK1-132-01) [Question: Can I get my wages now?] Answer: I NOT PAY you your wages before you FINISH the entire job.

(339) *a=tae wes nfaakotoon neu malfaane?*

(340) *Ka=fo tap pei tuok nfaakotoon gaag mau pan p̃a=fei paap̃not nawesien gaag.*

(341) *Ka=fo ta pei paaktofik mau pan p̃a=freg silu nawesien gaag.*

(83) [NO] (AK1-132-01) [As in 82 above.] I PAY you your wages after you FINISH the entire job.

(342) *Ka=fo tuok nfaakotoon gaag malen p̃a=faap̃not nawesien gaag.*

(343) *P̃a=fo wes nfaakotoon gaag malen p̃a=faap̃not nawesien gaag.*

(344) *Ka=fo paaktofik malen p̃a=faap̃not silu nawesien gaag.*

(84) [ON] (AK1-132-01) [B is setting out on a journey. A intends to sell her own house while is away. A tells about this:] A: When you COME BACK next year, I SELL my house.

(345) *malraan p̃a=ler mai ntau nen tu me kai=pe sor nasum̃ neu kia.*

(346) *malen p̃a=ler mai ntau nen tu me kineu kai=pe lakor sor nasum̃ neu kia.*

(85) [OBL] (AK1-132-01) [A began working here in June for almost thirty years ago. It is April and A tells that the anniversary is approaching:] A: In June this year I WORK here for thirty years.

(347) *atlag ni "June" ntau nen ke=fo paap̃not ntau ralim i=tool nen kai=pe tok weswes esan.*

(348) *atlag ni "June" ntau nen ke=fo paap̃not ntau ralim i=tool nen *a=po tok weswes esan.*

(349) *atlag ni "June" ke=fo pi ntau ralim i=tool nen kai=pe tok weswes esa.*

(350) *ntau ne atlag ni "June" ke=fo pi ntau raalim i=tool kin kai=pe tok weswes esan.*

(86) [NO] (AK1-132-01) If I GET my wages tomorrow, I BUY you a beer.

(351) *i=f-wel ka=(*fo) wes nfaakotoon neu matol ka=fo gaag pakot "beer" ke=skei.* (*fo* not grammatical in the protasis because it implies certainty that the event will happen)

(352) *i=f-wel ka=f tok wes nfaakotoon neu matol ka=fo gaag pakot "beer" ke=skei.*

(353) *i=f-wel ka=fla tok wes nfaakotoon neu matol ka=fo gaag pakot "beer" ke=skei.*

(354) *i=f-wel kin ka=fla tok wes nfaakotoon neu matol ka=fo gaag pakot "beer" ke=skei.*

(87) [NO] (AK1-132-01) [The speaker has not received his wages yet:] The day I GET my wages I BUY you a beer.

(355) *naliati nen ka==wes faat/nfaakotoon neu ka=fo gaag pakot "beer" ke=skei.*

(356) *naliati nen ka=f tok wes faat/nfaakotoon neu ka=fo gaag pakot "beer" ke=skei.*

(357) *naliati nen ka=fla tok wes faat/nfaakotoon neu ka=fo gaag pakot "beer" ke=skei.*

(358) *naliati nen kin ka=fla tok wes faat/nfaakotoon neu ka=fo gaag pakot "beer" ke=skei.*

(87ex) [You know which day you are getting the wages]

(359) *naliati nen ka=fo wes faat/nfaakotoon neu ka=fo gaag pakot "beer" ke=skei.*

(88) (AK1-132-01) Those who GET their wages tomorrow certainly GO to have beer.

(360) *tenen ruk=wes faat matool ruk=fo pan min "beer".*

(361) *namẽr nen ruk=fo wes nfaakooon gar matol ruk=fo pan min "beer".*

B.2 The Iamitive questionnaire (Olsson, 2013) (AK1-156)

(Q1) (I want to give your brother a book to read, but I don't know which. Is there any of these books that he READ already?) Yes, he READ this book.

(362) *a=mur ka=tu p̃alum natus ke=skei nen ke=fea, me a=tap tae te-tfale mau. Ga ki=pe fe tete natus nen su? ore, ki=pe fe-a-r su.*

(Q2) I LOSE my wallet! Can you help me look for it?

(363) *a=krak puek-ki "wallet" neu! ku=tae welu wou tak leeles?*

comments for Q2: kaipe - lost some time before, *kaipe - lost just now, lost (realis) it and found it (kaipe

(Q3) Did I tell you what happened to me yesterday? I LOSE my wallet!

(364) *kineu a=nrik-i-k ki nafte kin i=paakor-ki wou nanom? a=krak puel-ki "wallet" neu.*

(Q4) Then I got a call from a man. He said he FIND it on the bus.

(365) *ale natam̃ol i=skei i=neu pios nmarit. i=tli na i=pam̃ori em̃rom "bus".*

(Q5) (Imagine some fruit that is common in your area) You can't eat this one. It BE ROTTEN.

(366) *ku=kano paam tene, ki=pe sa..... ki=pe p̃o.*

(Q6) (Imagine some fruit that is common in your area) You can't eat this one. It BE RAW.

(367) *ku=kano paam tene, i=ta met.*

(Q7) (Imagine some fruit that is common in your area) You can eat this one. It BE RIPE.

(368) *ku=tae paam tene, ki=pe mam.*

(Q8) I received some bad news about uncle X. He BE ILL.

(369) *a=nrog tete nanrognrogoon sa ni awo X, ga i=msak.*

(Q9) I received some good news about uncle X. He BE HEALTHY/WELL.

(370) *a=nrog tete nangornrogon wi ni awo X, ki=pe m̃ol.*

(Q10) Her child already BE A STUDENT.

(371) *teesa ga (nega) ki=pe mai pi teesa "skul".*

(Q11) He BE RICH, because he worked hard.

(372) *ga i=pi soklep nlaken i=to weswes kerkrai.*

(373) *ga i=pei faria me ki=pe pi soklep.*
he was poor but now he is rich.

(Q12) He BE RICH, what more does he want?

(374) *ga ki=pe pi soklep, i=mer mur nafte?*

(Q13) Her brother doesn't have to apply for a visa, because he BE AN AMERICAN CITIZEN.

(375) *p̃alun i=tap mur na ke=freg nfauswen raki visa mau, nlaken ga i=pi teni America.*

(Q14) (A: Your brother is really nice!) B: Oh no, forget about him - he BE MARRIED.

(376) *aah p̃a=metp̃akro, ki=pe lak.*

(Q15) Hurry up, we BE LATE!

(377) *ko=trapelpel, tuk=fo frak.*

(Q16) When we arrived, the prayer (already) START.

(378) *malen u=pan paakor, nalotwen ki=pe pees.*

(Q17) Oh no, I FORGET to put the ice cream in the freezer! It MELT!

(379) *ah no, a=metp̃akro na ka=fus "ice cream" eṃrom freezer, ki=pe ser.*

(Q18) (On the telephone: Can I speak to X?) No, he LEAVE 5 minutes ago.

(380) *ki-pe tṃalu minit i=lim ki=pe nom*

(Q19) (On the telephone: A: Can I speak to X? B: No, he's not here...) He GO SHOPPING.

(381) *i=ta to mau. i=pan/ki=pe pan paakot tete sernale*

(Q20) (Can I see you next month?) No, next month I BE in Japan.

(382) *i=tik, atlag nen tu/ atlag fauṃ...ka=fo pato Japan.*

(Q21) (A: Where is my apple?) B: Oh, X EAT it.

(383) *oh, X kia i/ki=pe paam-i-ø.*

(Q22) (A: Oh, my stomach hurts now.) B: You EAT too much!

(384) *ku=faam toop*

(Q23) (A: How is the reading coming so far?) B: Good, I READ 3 books (so far).

(385) *i=wi, kai=pe fe natus i=tool ki.*

(Q24) (same context as in Q23) B: Badly, I only READ 3 books (so far).

(386) *i=ta wi mau, a=fe-a-ø natus i=tool ṃas.*

(Q25) I MEMORIZE all of the poems now.

(387) *Malfane kai=pe mrosoksok nafet nalag (malfane).*

(Q26) I only MEMORIZE half of the poems (so far).

(388) *A=mrosoksok nak nalag ṃas.*

(Q27) As soon as you SEE my brother, come and tell me.

(389) *Malnen p̃a=lek p̃aluk p̃a=mai nrik wou ki.*

(Q28) (At a birthday party for a child) Little brother BE ABOUT TO ARRIVE! (So hide the gifts he is to get and be ready to scream "surprise!")

(390) *Tai sees ke=fe mai ki. /Tai sees ki=pe to na ke=mai ki./ ke=fo mai ta pi twei mau.*

(Q29) (To a child: A: Why are you crying?) B: She PUNCH me!

(391) *Ga i=tup̃ kineu.* (*ki=pe* only if you expect it)

(Q30) When the oil BOIL a little, you put the meat in.

(392) *Malnen loor ke=nrus ftin, p̃a=tir ki napkas/ p̃a=fus napkas.*

(Q31) (On the phone:) Tell your brother to start working! It's ok, he WORK (= he is sitting in front of the computer, working)

(393) *I=wi, ga ki=pe to weswes./ Ga kis ki=pe to weswes.*

(Q32) It's ok, he WORK (= he already finished the work)

(394) *I=wi, ki=pe weswes su.*

(Q33) (At a party/meeting, commenting on which guests/participant arrived:) Good, my uncle COME. Let's go talk to him.

(395) *Awo neu me i=po mai* / if you are expecting him you can use *ki=pe* [new context: you are talking to someone and tell them your birthday, surprisingly it's on the same date and you say: *oh, ag me ku=po paakor malne!*]

(Q34) How strange, my uncle COME. (He wasn't invited/I thought he wouldn't come)

(396) *Kau, ga me i=po mai!/ Kau, ga ki=pe mai!*

(Q35) (Calling to a friend who is at the party) Who COME?

(397) *Fei mana ru=mai?/ Fei mana rui=pe mai?*

(Q36) Who COME so far?

(398) *Fei mana (kin) rui=pe pei mai?* - the first group arriving, the second group would be *rumer mai*/ you know a group is coming and you are not there when they are arriving *fei mana rupo pei mai?*

B.3 The Nondum Questionnaire (Veselinova, 2018) (AK1-156)

Questionnaire designed by Ljuba Veselinova (ljuba@ling.su.se), it continues the numbering of the iamitive questionnaire.

(Q37) (I didn't know your neighbor is already 30 years old. Is he married?) He NOT MARRIED (because he is a Catholic priest, so he can't marry)

(399) *Ga ke=fo kano lak.*
He can't get married. (because of his job)

(400) *Ga i=ta lak mau.*
he is not married/ *Ga ita ta lak mau./ Ga kefo kano lak. (it's forbidden)

Ga i=kano lak would be used if for some personal reason you are not able to do something.

(401) *A=kano waf.*
I can't swim. (it can also be used for forbidden, but you have to say *a=kano waf nlaken...* 'I can't swim because...')

(402) *Kineu ka=fo kano waf mees* (or some adverbial).
I'm forbidden to swim. (it can refer to being unable in the future).

but a person telling you can:

(403) *ku=kano waf! pã=fo ta=waf mau!*

(404) *Ag pã=fo ta=waf mau!*

(Q38) (I didn't know your brother is already 30 years old. Is he married?) He NOT MARRIED (but he and his fiancée are getting married later this year)

(405) *I=ta ta lak mau.*

(406) *ki=pe ta lak mau.*
the marriage was cancelled before getting married, or he got divorced.

(407) *ki=pe tap skot mtulep ga to mau.*
he is not with his wife anymore.

(Q39) (Martha's son has been in the hospital for a while. Is he going home soon?) No, he NOT WELL.

(408) *I=tik, i=ta ta m̃ol mau.*

(Q40) (A: How old is your child now? B: She is 2 years old. A: she TALK?) B: Yes, she TALK.

(409) *Ore, ki=pe pes.*

(Q41) (A: How old is your child now? B: She is 2 years old. A: Is she talking already?) B: No, she NOT TALK.

(410) *I=tik, i=ta tap pes mau.*

(Q42) (Very early morning, looking outside) The sun NOT RISE.

(411) *Aal i=ta ta paakor mau.*

(Q43) (X has been living in Japan for about 2 months) A: I NOT SPEAK Japanese

(412) *a=ta pes ki Japan mau.*
I don't speak japanese.

(413) *A=ta ta pes ki Japan mau.*
I don't speak Japanese yet.

(414) *Kai=pe ta pes ki Japan mau.*
I knew some at first, but I don't speak anymore.

(415) a. *Ku=po pak "taon"?*
b. *Kaipe ta pak taon mau. in the end I decided not to go. (=anymore)*

(416) *A=to kraknrog-o-ø na ka=fes ki Japan me kai=pe tap pes kin mau.*

(Q44) (We are running towards the church/mosque/temple) Somebody: Don't worry, the prayer/ceremony NOT START.

(417) *P̃a=ta mroput mau! Nalotwen i=ta tap pes mau.*

(Q45) (Imagine some fruit that is common in your area). You can't eat this one. It NOT RIPE.

(418) *I=ta ta mam mau. I=ta matu (ready) mau./ i=ta mam mau./ *ki=pe ta mam mau.*

(Q46) (Can I come over to play with your brother?) No, he NOT FINISH HOMEWORK.

(419) *i=tik, i=ta ta paɲ̃not nawesien ga mau./ ki=pe ta paɲ̃not nawesien ga mau.* (if you are expecting him to finish but he didn't.)

(Q47) (In a car, about to start a longer road trip. A: Why aren't we starting) B: I STILL READ directions.

(420) *A=ta to fe napu.*

(Q48) (same context as in 48) B: I NOT UNDERSTAND directions YET. (But I hope I will soon)

(421) *A=ta ta mrotae napu/nasiweran mau.* (with *kai=pe* it would mean 'I don't understand anymore'.)

(Q49) (Max turn said he would come back soon and then left) It was two months before I heard from Max again.

(422) Atlag inru ina itaakro kin go apo mer nrog nanrognrogon (news) ni Max.

(Q50) (Talking about a teenager who didn't come home on time) Max NOT COME until dawn.

(423) *Max i=puel tkal pulp̃og.* (*ki=pe puel* means he was lost/missing.)

(424) *Max i=ta mai mau tkal pulp̃og.*

(425) *Max i=puel pan po mai pulp̃og.*

(426) *Max i=po puel pulp̃og.* (confirming something)

(Q51) (Same context as 50) Max CALL (YET)?

(427) *Max ki=pe pios/ring ko?/ Max i=po ring?*

(Q52) (Same context as 50) Max NEVER CALL

(428) *Max i=ta pios mau.*

(429) *Max i=ta pios nrog malnen mau.*
In this time frame he didn't call.

(Q53) (Same context as 50) Max JUST COME

(430) *Max i=po mai kia.*

(Q54) (talking about a loan Max took. A: Has Max paid you back yet?) B: No, he NOT PAY (I don't think he ever will).

(431) *i=tik, i=ta ta paakot wou mau.*

(Q55) (A: How is the writing of your thesis coming): Good, I WRITE 3 chapters already

(432) *I=wi, kai=pe mtir namet nafsan i=tool su.*

(Q56) (A: How is the writing of your thesis coming): Bad, I only WRITE 1 page so far

(433) *i=trau saa, a=mtir naf̃elgan i=skei m̃as. (*kaipe)*

(Q57) (Looking at a fish that's still in the frying pan). Don't take it out. It NOT COOKED

(434) *i=ta ta maas mau.*

(Q58) (Answering a phone call at the office where the caller if asking is Sam still works there) Yes, Sam STILL WORK here

(435) *ore, Sam i=ta to weswes esa.*

(Q59) (Same context as in 58) No, Sam NO LONGER WORK here

(436) *i=tik, Sam ki=pe ta weswes esa mau.*

(437) *Sam i=po ta weses mau.*
Someone forbid him to work, finally he didn't/doesn't work – as a result of the disturbance

(438) *Sam i=po weswes.*
He is finally working.

B.4 The Future Questionnaire (Dahl, 2000b)

(1) (AK1-082-01) (TMAQ 15)[5] [Q: What your brother DO if you don't go to see him today, do you think? A:] He WRITE a letter (to me).

(439) *Ke=fo lakor mtir natus iskei ke=mai.*
3sg.irr=psp.irr maybe write letter one 3sg.irr=come
He will write a letter and send it (lit. to come (to me)).

(2) (AK1-082-01) (TMAQ 16) [Q: What your brother DO when we arrive, do you think? (=What activity will he be engaged in?)] He WRITE letters.

(440) *Ke=fo lakor tok mtir tete natus.*
3sg.irr=psp.irr maybe prog write some letter
He will write some letters.

(3) (AK1-082-01) (TMAQ 17) [Q: What your brother DO when we arrive, do you think? (=What activity will he be engaged in?)] He WRITE a letter

[5] This is the number of this sentence in Dahl (1985), put here for purposes of cross-referencing with Thieberger's (2006) version of that questionnaire.

(441) *Ke=fo lakor to mtir natus.*
3sg.irr=psp.irr maybe prog write letter
He will be writing a letter.

(4) (AK1-082-01) (TMAQ 22) [Q: What are you planning to do right now? A:] I WRITE letters(=I MANAGE my correspondence)

(442) *Ka=fo mtir tete natus malfane.*
3sg.irr=psp.irr write some letter now
I will write some letters now.

(5) (AK1-082-01) (TMAQ 23) [Q: What are you planning to do right now? A:] I WRITE a letter

(443) *Ka=fo mtir natus ke=skei.*
3sg.irr=psp.irr write letter now
I will write a letter.

(6) (AK1-082-01) (TMAQ 24) [Neither A nor B can see B's brother. A: What he DO right now, do you think? (=What activity is he engaged in?)] He WRITE letters (I think so because he does that every day at this time)

Ku=mrokin ito preg nafte malfane?

(444) *Malfane i=pato mtir tete natus.*
now 3sg=be.at write some letter
He is writing some letters (over there).

(ipato means that the speaker is not in the same place as the subject.)

(7) (AK1-082-01) (TMAQ 27) [A: My brother has got a new job. He'll start tornorrow. B: What kind of work he DO there?] He WRITE letters

(445) *Ke=fo preg sef nawesien?*
Which job will he do?

(446) *Sef nawesien kin ke=fo preg?*
Which job is that he will do?

(447) *Ke=fo to mtir natus.*

(448) *Ke=fo to gar mtir natus.*

(8) (AK1-082-01) (TMAQ 36) [It's no use trying to swim in the lake tomorrow.] The water BE COLD (then)

(449) *Nai ke=fo mlanr.*

(450) *Nai ke=fo lakor mlanr.*

(451) *Nai ke=fo lakor to mlanr.*

(452) *Nai i=fla to mlanr.*

(453) **Nai ke=mlanr.*

(8ex) [You are pouring the cold water over the hot/warm water and you are waiting for it to cool down.]

(454) *Nai ke=fo to mlanr.*

(9) (AK1-082-01) (TMAQ 79) If you PUT a stone into this bag, it BREAK

(455) *I=f-wel p̃a=fai faat ke=fak naal, ke=fo maf̃or.*

(10) (AK1-082-01) (TMAQ 80) Even if you PUT a stone into this bag, it not BREAK

(456) *Ku=fla to pai faat eṁrom, ke=fo kano maf̃or.*

(457) *I=fla to mai, ka=fo kano tausi.*
Even if he comes, I won't go.

Also in (AK1-084-01)

(11) (AK1-082-01) (TMAQ 81) [Q: What HAPPEN if I eat this mushroom?] You DIE

(458) *I=f-wel kafam talim, ke=fo tfale?*

(459) *P̃a=fo (lakor) mat.*

(460) *Ku=fla to mat.*
Maybe you will die.

(*Ku=f to mat-* if you die)

(12) (AK1-082-01) (TMAQ 82) (According to the contract) we not WORK tomorrow

(461) *Taos nanrik soksokien nagit, tuk=fo ta weswes matol mau.*

(462) *I=tik, ke=fo tik-ki nawesien matol.*

(463) *Tu=ta weswes matol mau.*

(13) (AK1-082-01) (TMAQ 103) [The boy is expecting a sum of money] When the boy GET the money, he BUY a present for the girl.

(464) *Malnen naturiai ke=wes faat, ke=fo nin matuerik paakot naftuan.*

(14) (AK1-082-01) (TMAQ 104) [The boy thinks that he will perhaps get a sum of money] If the boy GET the money, he BUY a present for the girl.

(465) *Malnen naturiai ke=wes faat, ke=fo nin matuerik paakot naftuan.*

(15) (AK1-083-01) (TMAQ 105) [the speaker knows the boy was expecting money, but he doesn't know if he got it] If the boy GET the money (yesterday), he BUY a present for the girl.

(466) *I=f-wel kin naturiai ke=wes naul nanom, ke=fo (lakor) pakot naftuan nin tesa nmatu.*

(467) *I=f-wel kin naturiai i=f wes*

(468) *I=f-wel kin naturiai ke=fla*

Note: inversion possible, but changes the meaning to the counterfactual

(16) (AK1-083-01) (TMAQ 106) [The speaker knows the boy was expecting money and that he did not get it] If the boy GET the money (yesterday), he BUY a present for the girl.

(469) *I=f-wel kin naturiai ke=wes naul nanom, ke=fo pakot naftuan.*

(470) *Ke=f mer wes naul nanom, ke=fo pakot naftuan.*

(471) *Naturiai ke=f wes naul nanom, ke=fo pakot naftuan.*

(17) (AK1-083-01) (TMAQ 107) [Talking to someone who is leaving in a while] When you RETURN, I WRITE this letter (=I FINISH it already at that time).

(472) *Malnen p̃a=ler, kai=pe mtir natus su.*

(473) *P̃a=ler mai me kai=pe mtir natus su.*

(18) (AK1-083-01) (TMAQ 108) [Said as an order by a teacher leaving the classroom] When I RETURN, you WRITE this assignment (=You FINISH it by then)

(474) *Malne ka=ler mai, koi=pe mtir su.*

(475) *Ka=ler mai, koi=pe mtir su.*

(476) *Ka=fan ler mai, koi=pe mtir-i.*

(19) (AK1-083-01) (TMAQ 124) My brother HOPE (right now) that the water BE COLD.

(477) *P̃aluk i=mrokin nai i=mlanr patoki.*

(20) (AK1-083-01) (TMAQ 125) [Uttered as a promise] PROMISE to COME to you tomorrow.

(478) *A=to tilm̃ori ka=fo net matol.*

(479) *A=preg nanrik soksokien i=skei na ka=fo welu-a-ø me kai=pe ta preg mau.*
I made a promise I would help him, but I haven't done it.

(21) (AK1-083-01) (TMAQ 131) You MUST GO to bed before you GET tired (today)

(480) *P̃a=ta to pan p̃a=maos mau, p̃a=matur pelpel.*
Don't get tired, sleep early.

(22) (AK1-083-01) (TMAQ 132) (Yesterday evening) I GO to bed before my brother COME home.

(481) *Nanom p̃og a=pei matur me paluk i=po mai pak esum̃.*

(482) *Nanom p̃og a=pei matur *go paluk i=po mai pak esum̃.* Also in (AK1-084-01)

(23) (AK1-086-01) (TMAQ 145) [Traveller to local:] If you SHOW me the way, I GIVE you money

(483) *I=f-wel kin p̃a=fei ki wou ki napu, ka=fo tuok naul.*

(24) (AK1-086-01) (TMAQ 146) [Mother to child:] If you not STOP PLAY with that ball, I TAKE it away

(484) *I=f-wel p̃a=tap makot "ball" go mau, ka=fo wes lua.*

(25) (AK1-086-01) (TMAQ 152) [Said by a young man] When I GROW old, I BUY a big house

(485) *Malnen ka=fan toop, ka=fo paakor nasum̃ p̃ur i=skei.*

(26) (AK1-086-01) [My brother is late for dinner.] When he ARRIVE, the food BE cold.

(486) *Selwan i=mai sok/paakor, nafnag ki=pe mlanr.*

(487) *Selwan i=mai paakor, nafnag ki=pe mlanr.*

(26ex) [If the food gets cold only after he arrives]

(488) *Selwan i=mai sok go nafnag i=mlanr.*

(27) (AK1-086-01) [Mother to children:] We EAT (alt. HAVE dinner) now!

(489) *Tuk=fam malfane!*

(28) (AK1-086-01) [Do you intend to stay here?] No, I live in X-place next year.

(490) *I=tik, ka=fo tok Berlin ntau nen tu.*

(29) (AK1-086-01) [Talking about the speaker's plans for the evening:] I STAY at home.

(491) *Ka=fo tok esum̃ (m̃as to).*

(492) *i=en matur*
He is sleeping (far away from you).

(493) *i=pen matur malfane (*su).*

(30) (AK1-086-01) [Talking about the speaker's plans for the evening:] I WORK in the garden.

(494) *Ka=fo pato weswes talm̃at.*

(495) *Ka=mtir?*
Can I write here?

Note: *pe* in these examples refers to a place in space (demonstrative), not the perfect *pe*.

(496) *Ka=pe lek-a-ø?*
Can I see?

(497) *P̃a=pe mai!*
Come here!

(498) *P̃a=pe preg-i-ø namrun?*
Can you do something?

(499) *P̃a=pe nrus!*
Move a bit!

(500) *Ka=pe pam?*
Can I try?

(501) *P̃a=pe pam?*
You want to try?

(31) (AK1-086-01) [Talking about the speaker's plans for the evening:] I WRITE a letter.

(502) *Ka=fo mtir natus.*

(32) (AK1-086-01) [Talking about the speaker's plans for the evening:] I GO to town.

(503) *Ka=fo pak "town".*

(33) (AK1-086-01) [Talking about the speaker's plans for the evening:] I GO to bed early.

(504) *Ka=fo matur pelpel.*

(505) *Ka=fo pak nawol pelpel.*
I will go to bed early.

(34) (AK1-086-01) [Talking about the speaker's immediate plans:] I STAY at home.

(506) *Ka=fo tok esum̃.*
I will stay at home.

(507) *Ka=fo pato esum̃ malfane.*
I will be at home now.

(508) *Ka=fan pato esum̃.*

I am going to be home.

(509) *Ka=fak esum̃.*
I am going home.

(35) (AK1-086-01) [Talking about the speaker's immediate plans:] I WORK in the garden.

(510) *Ka=fo weswes talm̃at.*

(511) *Ka=fo to weswes talm̃at.*

(512) *Ka=fan weswes talm̃at malfane.*

(36) (AK1-086-01) [Talking about the speaker's immediate plans:] I WRITE a letter.

(513) *Ka=fo mtir natus.*

(37) (AK1-086-01) [Talking about the speaker's immediate plans:] I GO to town.

(514) *Ka=fak "town".* I am going to town right now.

(38) (AK1-086-01) [Talking about the speaker's immediate plans:] I GO to bed.

(515) *Ka=fan matur.*

(39) (AK1-086-01) [Talking about the speaker's plans for tomorrow:] I STAY at home.

(516) *Ka=fo tok esum̃ (m̃as tok) matol.*

(40) (AK1-086-01) [Talking about the speaker's plans for tomorrow:] I WORK in the garden.

(517) *Ka=fo (to) weswes talm̃at.*

(518) *Ka=fo pak tam̃at.*

(41) (AK1-086-01) [Talking about the speaker's plans for tomorrow:] I WRITE a letter.

(519) *Ka=fo mtir natus.*

(42) (AK1-086-01) [Talking about the speaker's plans for tomorrow:] I GO to town.

(520) *Ka=fo pak "town".*

(43) (AK1-086-01) [Talking about the speaker's plans for tomorrow:] I GO to bed early.

(521) *Ka=fo matur pelpel.*

(44) (AK1-086-01) [My brother is tired.] He WAKE up late tomorrow.

(522) *Ke=fo pilo frak matol.*

(45) (AK1-086-01) [My brother is tired.] He FALL ASLEEP early in the evening.

(523) *Ke=fo matur pelpel kotfan (ne)/kotfan matol.*

(46) (AK1-086-01) [There are black clouds in the sky.] It RAIN in the evening.

(524) *Us ke=fo (lakor) wo kotfan.*

(525) *Us i=fla wo kotfan.*

(526) When you are pregnant: *I=fla pi nanwi ko nmatu?*

(47) (AK1-086-01) [There are black clouds in the sky.] It RAIN (very soon).

(527) *Us i=wo pelpel.*

(528) *Us ke=fo (lakor) wo pelpel.*

(529) *Us i=fla wo pelpel.*

(48) (AK1-086-01) [There are black clouds in the sky.] It RAIN in a few minutes.

(530) *Us ke=fo (lakor) wo nrus pi malfane.*

(49) (AK1-086-01) [The weather is changing.] It RAIN tomorrow.

(531) *Us ke=fo wo matol.*

(50) (AK1-086-01) [The weather is changing.] Maybe it RAIN tomorrow.

(532) *Us ke=fo lakor wo matol.*

(51) (AK1-086-01) [The weather is changing.] It be COLD in the evening.

(533) *Ke=fo mlanr kotfan.*

(534) *Ke=fo lakor mlanr.*

(535) *Naor ke=fo mlanr.*

(52) (AK1-086-01) [The weather is changing.] It be COLD tomorrow.

(536) *Naor ke=fo mlanr matol.*

(537) *I=pan mlanr.*
It slowly became colder.

(538) *Ki=pe mlanr.*
It is cold. (implying a previous change)

(539) *Ki=pe to (pan) mlanr.*
It is/was getting colder.

(53) (AK1-086-01) The sun RISE at six o'clock tomorrow.

(540) *Aal ke=fo sook matol "six o'clock" p̃ulp̃og.*

(54) [Does your brother intend to stay here?] No, he LIVE in X-place next year.

(541) *I=tik, ke=fo tok Berlin ntau nen tu.*

(55) (AK1-086-01) [Talking about a third person's plans for the evening:] He STAY at home.

(542) *Ke=fo patok esum̃.*

(56) (AK1-086-01) [Talking about a third person's plans for the evening:] He WORK in the garden.

(543) *Ke=fo (pato) weswes talm̃at kotfan.*

(57) (AK1-086-01) [Talking about a third person's plans for the evening:] He WRITE a letter.

(544) *Ke=fo mtir natus.*

(58) (AK1-086-01) [Talking about a third person's plans for the evening:] He GO to town.

(545) *Ke=fo pak "town".*

(59) (AK1-086-01) [Talking about a third person's plans for the evening:] He GO to bed early.

(546) *Ke=fo matur pelpel.*

(60) (AK1-086-01) [Talking about a third person's immediate plans:] He STAY at home.

(547) *Ke=fo tok esum̃.*

(548) *Ke=fak esum̃.*

(61) (AK1-086-01) [Talking about a third person's immediate plans:] He WORK in the garden.

(549) *Ke=fan weswes.*

(550) *Ke=fo weswes.*

(551) *Ke=weswes talm̃at.*

(62) (AK1-086-01) [Talking about a third person's immediate plans:] He WRITE a letter.

(552) *Ke=mtir natus.*

He is going to write a letter right now.

(553) *Ka=mtir natus.*
I am going to write a letter right now.

(63) (AK1-087-01) [Talking about a third person's immediate plans:] He GO to town.

(554) *Ke=fak "town".*

(64) (AK1-087-01) [Talking about a third person's immediate plans:] He GO to bed.

(555) *Ke=fan matur.*

(65) (AK1-103-01) When I GET home in the evening, my brother BE HAPPY.

(556) *Selwan ka=ler pak esum̃ kotfan, raitok ke=fo semsem.*

(557) *Malnen ka=ler pak esum̃ kotfan, raitok ke=fo semsem.*

(66) (AK1-103-01) If it RAIN tomorrow, we STAY at home.

(558) *f-wel ke=f wo matol, tuk=fo tok esum̃.*

(559) *Ke=f mer wo matol, ka=fo tok esum̃.*

(560) *Ka=fo tok esum̃ matol, f-wel us ke=f wo.*

Other possibilities for the protasis: *f-wel ke=wo, if-wel kin*

(67) (AK1-103-01) If it BE COLD tomorrow, we STAY at home.

(561) *I=f-wel ke=mlanr matol, ka=fo tok esum̃.*

(562) *Ka=fo tok esum̃ matol, f-wel kin naor ke=mlanr.*

(563) *Naor i=fla tok mlanr matol, ka=fo tok esum̃.*

Note: more formal: *I=f-wel kin ke=f to mlanr*

Note: old form: *Naor i=f mlanr*

(68) (AK1-103-01) If I GET the money tomorrow, I BUY a present for you.

(564) *Ka=fla tok we naul matol, ka=fo gaag wes naftuan ke=skei.*

(565) *Ka=fo gaag wes namrun iskei, i=f-wel kin kawes faat matol.*

(69) (AK1-103-01) If I GET the money today, I BUY a present for you.

(566) *Ka=f to wes naul mes, ka=fo gaag pakot tenmatun.*

(567) *Ka=fo gaag pakot namrun i=skei, i=f-wel kawes faat wes.*

(70) (AK1-103-01) My brother SAY yesterday that he COME here today.

(568) *P̃aluk i==tli nanom na ke=fo mai pak esan mes.*

(569) *P̃aluk i=tilsei nanom na mes ke=fo mai pak esa.*

(570) **Tai i=til-i-ø nanom na ke=fo mai naor kia.*

(71) (AK1-103-01) My brother HOPE yesterday that you COME here today.

(571) *P̃aluk i=to mrokin nanom kia na p̃a=fo mai pak esan mes.*

(572) *Tai i=to mrokin nanom kia na p̃a=fo mai mes.*

(72) (AK1-103-01, AK1-104-01) My brother SAY yesterday that he COME here next week.

(573) *P̃aluk i=tli nanom na ke=fo mai pak san "wik" fom.*

(574) *P̃aluk i=til-i-ø nanom na "wik" faum(fom) ke=fo mai pak sa.*

(575) *Tai neu i=to til-i-ø na ke=fo mai "wik" fom wanki.* (or *wikwan kia, ipa*)

(73) (AK1-105-01) My brother SAY yesterday that it RAIN today.

(576) *P̃aluk i=pe til-i-ø nanom na us ke=fo wo mes.*

(577) *Tai neu i=pe til-i-ø su nanom na us ke=fo wo mes.*

(578) *Tai i=to tli malfane.*

(579) *Tai i=to tli kia. (yesterday)*

(580) *I=to na naftekia?*
What was he saying yesterday?

(581) *I=to nrik kik naftekia?*

(582) *Kineu a=na i=tefla, me ga i=na i=to i=preg teflan.*
I said that, but then he did that.

(74) (AK1-105-01) My brother SAY yesterday that it BE COLD today.

(583) *P̃aluk i=tli nanom na mees ke=fo mlanr.*

(584) *Tai i=til-i-ø nanom na ke=fo mlanr mees.*

(75) (AK1-107-01) My brother HOPE yesterday that it BE COLD today.

(585) *P̃aluk i=tok mrokin nanom na mees ke=fo mlanr.*

(586) *Nanom p̃aluk i=to mrokin na mees ke=fo mlanr.*

(76) (AK1-107-01) My brother WANT (now) to buy a house.

(587) *P̃aluk i=mur (na) ke=faakot nasum̃.*

(588) *P̃aluk i=mur na ka=faakot nasum̃.*
My brother wants me to buy a house.

(77) (AK1-107-01) This screw does not want to turn.

(589) *"Screw" ne i=kano tilmar.*
This screw cannot turn.

(78) (AK1-107-01) My brother WANT (now) to be a farmer.

(590) *P̃aluk i=mur ke=fi natam̃ol ni talm̃at.*

(591) *P̃aluk i=mur na ke=mai pi natam̃ol ni talm̃at te-mal.* (one day)

(79) (AK1-107-01) My brother INTEND to buy a house.

(592) *P̃aluk i=to mro nen kin ke=faakot nasum̃.*

(593) *I=mur ke=faakot nasum̃.*

(80) (AK1-107-01) I HAVE TO thank my brother for helping me.

(594) *Ka=mas (*a=mas) psawi p̃aluk nag i=tae welu kineu.*

(595) *A=psawi kik kin ku=welu kineu.*

(81) (AK1-107-01) My brother MUST sell his house now.

(596) *P̃aluk ke=mas sor nasum̃ ga.*

(82) (AK1-107-01) My brother MUST sell his house soon.

(597) *P̃aluk ke=mas sor nasum̃ ga pelpel.*

(83) (AK1-109-01) My brother CAN lift this stone.

(598) *P̃aluk i=tae nrekat faat ne.*

(84) (AK1-109-01) My brother CAN read and write.

(599) *P̃aluk i=tae feef go i=tae mtir.*

(85) (AK1-109-01) I BE ABOUT TO fall asleep.

(600) *M̃eltig nen ka=fe matur kis.*

(601) *Ka=fe pan.*

I'm leaving.

(602) *Kai=pe to na ka=matur.*
I'm going to sleep now.

(603) *P̃a=fe pan go?*
You are going now?

(604) *P̃a=fe to?*
You are staying?

(605) *Ka=fe min.*
I'm thinking of drinking.

(606) *Ka=fe ta min mau.*

(607) *Ki=pe paam̃or nawesien.*
He already found the job.

(608) *Ki=pe ta paam̃or nawesien mau.*

(609) *Kef=e ta weswes mau.*
He decided not to work.

(86) (AK1-109-01) Yesterday, I BE ON THE VERGE OF being run over by a car.

(610) *Nanom na nrakses (nearly) loto keteet ki wou.*

(87) (AK1-109-01) What you DO when you COME home in the evening? I WRITE a letter, (then) I DRINK some tea and (then) I GO to bed.

Every afternoon:

(611) *Ku=to preg nafte selwan/malnen ku=ler mai pak esum̃ kotfan?*

(612) *Ser kotfan, a=mtir natus, i=na i=nom, a=min "tea", i=na i=nom, a=pan matur/kai=pe matur.*

This afternoon:

(613) *P̃a=fo preg nafte selwan p̃a=ler mai pak esum̃ kotfan?*

(614) *Ka=fo makir natus, ke=nom, ka=fo min tete "tea", ke=na ke=nom ale, ka=fan matur/kai=pe matur.*

(88) (AK1-109-01) How I GET to your brother's house? You TURN left at the crossing.

(615) *Ka=fo tfale pak esum̃ ni p̃alum?*

(616) *Ka=tfale pak esum̃ ni p̃alum?*

(617) *P̃a=fak napu takot, p̃a=tare pak maur.*

(89) (AK1-109-01) How I GET to your brother's house? You TURN left at the crossing, (then) WALK for ten minutes and (then) TURN left again.

(618) *Ka==tfale pak esuṃ̃ ni p̃alum?*

(619) *P̃a=siwer pak napu takot, p̃a=tare pak maur, p̃a=mer siwer parekrik, ke=na ke=nom, p̃a=mer tare pak maur.*

(90) (AK1-109-01) (According to the schedule) the train LEAVE at noon.

(620) *"Train" ke=fo tuṃ̃alu aliat.*

(621) *Maan i=to tuṃ̃alu.*
The plane is leaving (now).

(622) *Maan i=tuṃ̃alu.*
The plane left.

(623) *Maan ki=pe to tuṃ̃alu.*
The plane is leaving.

(91) (AK1-109-01) My brother SAY (now) that he GO to town tomorrow.

(624) *P̃aluk i=to tli malfane na ke=fo pak (*kefan) "town" matol.*

(92) (AK1-109-01) My brother SAY (now) that it RAIN tomorrow.

(625) *P̃aluk i=to tli malfane na us ke=fo wo matol.*

(93) (AK1-109-01) My brother BELIEVE (now) that it RAIN tomorrow.

(626) *P̃aluk i=faafat na us ke=fo wo matol.*

(94) (AK1-109-01) My brother HOPE (now) that it RAIN tomorrow.

(627) *P̃aluk i=trau mur na us ke=fo wo matol.*

(95) (AK1-109-01) What you DO right now? I WRITE a letter to my brother in order that he KNOW that I COME to see him.

(628) *Ku=to preg nafte malfane?*

(629) *A=tok makir natus i=skei pak p̃aluk malfane nen ke=tae na ka=fo pan lek-a-ø matol.*

(96) (AK1-109-01) What you DO yesterday? I WRITE a letter to my brother in order that he KNOW that I COME to see him.

(630) *Ku=preg nafte nanom?*

(631) *A=makir natus i=skei pak p̃aluk na ke=tae na ka=fo pan lak-a-ø matol. A=nrik kin na ka=fo pan lak-a-ø matol knen.*

(97) (AK1-109-01) A: You promised to make some food for me. When it BE ready? B: It BE READY in five minutes.

(632) *Ku=tli na p̃a=fo neu preg tete nafnag malfane.*

(633) *Gas kin/Sef mal kin ke=fo m̃as?*

(634) *Ke=fo m̃as pak 5 "minit".*

(635) *Ki=pe m̃as.*
It is already done.

(98) (TMAQ 73) (AK1-109-01) [What kind of sound do cats make?] They MEOW

(636) *Sef nametrau misleo kin pus i=to preg?*

(637) *Pus i=tok "meow"/ ru="meow" / i="meow" / ru=tok "meow".*

(99) (TMAQ 18) (AK1-109-01) [What your brother usually DO after breakfast?] He WRITE letters

(638) *P̃alum i=tok preg nafte ser p̃ulp̃og mal nen kin i=faam su/ ki=pe faam su?*

(639) *I=to makir/mtir (tete/nafet) natus.*

(100) (AK1-110-01) [I heard a funny story the other day.] When you HEAR it, you LAUGH.

(640) *A=nrog nafkaruen i=skei te naliati ne i=pa.*

(641) *Natrauswen i=skei kia anrogo, i=trau plak namruen (funny).*

(642) *Malnen p̃a=nrogo, p̃a=fo mur.*

(101) (AK1-110-01) [A: I have a headache. B: Take this medicine.] It MAKE you feel better.

(643) *Np̃auk i=ptin.*

(644) *P̃a=min nalkas ne! Ke=fo preg-i-ø na p̃a=nrog tiawi.*

(645) *A=nrogteesa.*
I feel sad.

(646) *A=nrogteesa kia natam̃ol ne i=mat.*
I am sad that that man died.

At the funeral:

(647) *A=nrogteesa kin natam̃ol ne imat.*

(648) *Ka=fo nrog teesa i=f-wel kin kemat.*

(649) *A=nrog teesa kin i=to na ke=mat.*
I am sad that he is about to die.

(650) *Ke=fo mroler (think back) ki supɸ na i=preg-i-ø.*
He will regret that thing he did.

(651) *A=malier kia a=preg…*
I am ashamed that I did…

(102) (AK1-110-01) I not LIKE this person (now) and I not LIKE him (in the future).

(652) *A=trau mal-ki mees go ka=fo malkin m̃as tok termau.*(ever)

(653) *A=malkin mees go ka=fo malkin m̃as tok termau.*(ever)

(103) (AK1-110-01) I not KNOW where he BE.

(654) *A=tap ta esaan i=tkos mau.*

(104) (AK1-110-01) (an order:) OPEN the door!

(655) *P̃a=ɸelgat nmet!*

(105) (AK1-110-01) (let us) OPEN the door!

(656) *Tuk=ɸelgat nmet!*

(106) (AK1-110-01) (a prohibition:) (do) not OPEN the door!

(657) *P̃a=tap ɸelgat nmet mau!*

(107) (AK1-110-01) (a warning:) (Look out, do) not STEP in the mud!

(658) *P̃a=lekor, ɸa=ta kam nlel mau!*

(108) (AK1-110-01) (wishing someone good health:) (may) you always BE HEALTHY!

(659) *P̃a=fo (tok) piatlak nam̃olien wi sermal!*

(660) *P̃a=fo piatlak nam̃olien skot maarik (husband) negaag!*

(109) (AK1-110-01) (Uttered at eight o'clock - the speaker's brother left at six and has not returned yet:) He RETURN at seven o'clock.

(661) *I=na ke=ler mai "seven o'clock" me i=ta puel.*
He was supposed to come at seven o'clock, but is not here.

(662) *A=na ka=min.*
I am about to drink.

(663) *I=na ke=fo saan mal, me i=puel.*
He was supposed to come at that time here, but he is not here.

(664) *A=na ka=net pak esum̃ gaag, me a=kano net.*

(665) *A=na ka=fak esum̃.*
I'm going home.

(110) (AK1-110-01) Yesterday when I woke up in the morning, there were dark clouds in the sky. I took my umbrella, because it RAIN in a few minutes.

(666) *Nanom selwan a=tokleg p̃ulp̃og, nsau i=malik.*

(667) *A=pu sulok nlaken parekrik (after a bit) us ki=wo.*

(668) *A=pu sulok nlaken parekrik (after a bit) us i=wo/ke=fo wo.*

(669) *A=pu sulok nlaken parekrik (after a bit) us i=to na ke=wo.*
I took my umbrella, because it was about to rain.

(111) (AK1-110-01) I met your brother a few days ago. He was very worried, because he GO to the dentist next day.

(670) *Tete naliati na i=pa/tete naliati ki=pe nom pa, a=patlas p̃alum.*

(671) *I=to mroput nlaken i=to na ke=fak dentist naliati kaaru (knen).*